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MITSUBISHI

GRAPHIC OPERATION TERMINALS

MELSEC-GOT

# HARDWARE MANUAL (CONNECTION)

GOT-F900 SERIES GRAPHIC OPERATION TERMINAL

## Covered models

F920GOT
- F920GOT-BBD5-K-E

F930GOT
- F930GOT-BWD-E
- F930GOT-BBD-K-E

F940GOT
- F940WGOT-TWD-E
- F940GOT-SWD-E/-LWD-E

Handy GOT
- F940GOT-SBD-H-E/-LBD-H-E
- F943GOT-SBD-H-E/-LBD-H-E
- F940GOT-SBD-RH-E/-LBD-RH-E
- F943GOT-SBD-RH/-E-LBD-RH-E

GOT-F900

**Foreword**

- This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of the GOT-F900 SERIES GRAPHIC OPERATION TERMINAL. It should be read and understood before attempting to install or use the unit.
- Further information can be found in the GOT-F900 Operation Manual, F920GOT-K Installation Manual, F930GOT Installation Manual, F930GOT-K Installation Manual, F940GOT Installation Manual, F940WGOT Installation Manual.
- If in doubt at any stage of the installation of GOT-F900 SERIES GRAPHIC OPERATION TERMINAL always consult a professional electrical engineer who is qualified and trained to the local and national standards which apply to the installation site.
- If in doubt about the operation or use of GOT-F900 SERIES GRAPHIC OPERATION TERMINAL please consult the nearest Mitsubisi Electric distributor.
- This manual is subject to change without notice.

# GOT-F900 SERIES GRAPHIC OPERATION TERMINAL

## HARDWARE MANUAL (CONNECTION)

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**FAX BACK**

Mitsubishi has a world wide reputation for its efforts in continually developing and pushing back the frontiers of industrial automation. What is sometimes overlooked by the user is the care and attention to detail that is taken with the documentation. However, to continue this process of improvement, the comments of the Mitsubishi users are always welcomed. This page has been designed for you, the reader, to fill in your comments and fax them back to us. We look forward to hearing from you.

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Thank you for taking the time to fill out this questionnaire. We hope you found both the product and this manual easy to use.

## Guidelines for the Safety of the User and Protection of the Graphic operation terminal GOT-F900

This manual provides information for the use of the Graphic operation terminal GOT-F900. The manual has been written to be used by trained and competent personnel. The definition of such a person or persons is as follows;

a) Any engineer who is responsible for the planning, design and construction of automatic equipment using the product associated with this manual should be of a competent nature, trained and qualified to the local and national standards required to fulfill that role. These engineers should be fully aware of all aspects of safety with regards to automated equipment.

b) Any commissioning or service engineer must be of a competent nature, trained and qualified to the local and national standards required to fulfill that job. These engineers should also be trained in the use and maintenance of the completed product. This includes being completely familiar with all associated documentation for the said product. All maintenance should be carried out in accordance with established safety practices.

c) All operators of the completed equipment should be trained to use that product in a safe and coordinated manner in compliance to established safety practices. The operators should also be familiar with documentation which is connected with the actual operation of the completed equipment.

**Note :** Note: the term 'completed equipment' refers to a third party constructed device which contains or uses the product associated with this manual.

### Notes on the Symbols Used in this Manual

At various times through out this manual certain symbols will be used to highlight points of information which are intended to ensure the users personal safety and protect the integrity of equipment. Whenever any of the following symbols are encountered its associated note must be read and understood. Each of the symbols used will now be listed with a brief description of its meaning.

### Hardware Warnings

1) Indicates that the identified danger **WILL** cause physical and property damage.

2) Indicates that the identified danger could **POSSIBLY** cause physical and property damage.

3) Indicates a point of further interest or further explanation.

### Software Warnings

4) Indicates special care must be taken when using this element of software.

5) Indicates a special point which the user of the associate software element should be aware of.

6) Indicates a point of interest or further explanation.

- Under no circumstances will Mitsubishi Electric be liable responsible for any consequential damage that may arise as a result of the installation or use of this equipment.
- All examples and diagrams shown in this manual are intended only as an aid to understanding the text, not to guarantee operation. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.
- Please contact a Mitsubishi distributor for more information concerning applications in life critical situations or high reliability.

**Note to user**

This manual describes the connection procedure to connect the graphic operation terminal (GOT-F900 Series) to a MELSEC FX/A/QnA/Q Series PLC, PLC by another company, printer, bar code reader, etc.
Please read this manual before using the GOT-F900 Series, understand sufficiently the use of the product, then use correctly the product.
For the contents related to the specifications and the operations such as the display function of the product, refer to the USER'S MANUAL of each product offered separately.
For the details about screen creation for GOT-F900, refer to the OPERATION MANUAL attached to the screen creation software.
Make sure that this manual is delivered to the end user.

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Windows95 is written as an abbreviation of Microsoft® Windows® 95 operating system.

Windows98 is written as an abbreviation of Microsoft® Windows® 98 operating system.

WindowsNT4.0 is written as an abbreviation of Microsoft® Windows® NT Workstation 4.0 operating system.

Windows2000 is written as an abbreviation of Microsoft® Windows® 2000 Professional.

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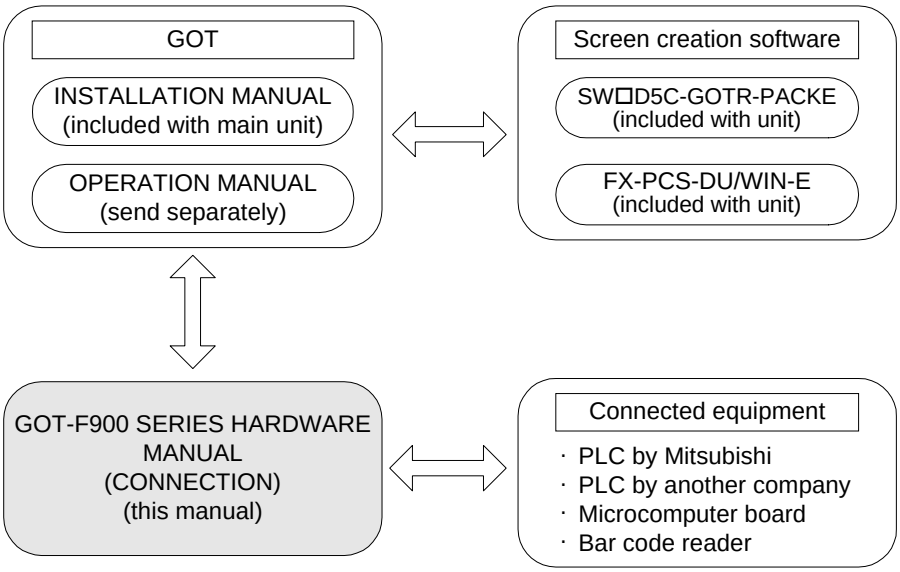
# 1. Introduction

We appreciate it very much that you have purchased Mitsubishi graphic operation terminal.
Please read thoroughly this manual to understand sufficiently and use correctly the functions and the performance of the graphic operations terminal.
Please make sure that this manual is delivered to the end user.

## 1.1 Rank and Use Method of This Manual

The following manuals are offered for the GOT-F900 Series.
Each manual is classified in accordance with the purpose. Read a manual suitable to your purpose, then understand handling, the operations and the function of the GOT and the screen creation software GT Designer (SW□D5C-GOTR-PACKE) or FX-PCS-DU/WIN-E.




This manual describes how to set the screen creation software, select cables and perform wiring in connecting the GOT-F900 Series to a connected equipment.

This manual is divided into the following portions in accordance with the type of the GOT-F900 Series.

- F920GOT-K, F930GOT(-K), F940GOT or F940WGOT Series ..... From Section 4
- F940 Handy GOT Series ..... From Section 5

### 1.1.1 Classification of Manuals in Accordance with Purpose

When requiring a manual not included with the product, contact our sales representative.

**THIS MANUAL**

Describes in details the connection to a PLC or personal computer and the setting method.

- GOT-F900 SERIES GRAPHIC OPERATION TERMINAL HARDWARE MANUAL (CONNECTION)
  - To understand how to connect the main unit to equipment.
  - To learn how to set the screen creation software.

It is stored as a PDF file in the CD-ROM of the SW□D5C-GOTR-PACKE.

**HARDWARE MANUAL AND INSTALLATION MANUAL**

Describes mainly the outside dimension, the installation, the power supply wiring and the electrical specifications.

- F920GOT-BBD5-K-E INSTALLATION MANUAL (No. JY997D02201)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F920GOT-BBD5-K-E.

- F930GOT INSTALLATION MANUAL (No. JY992D95701)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F93□GOT-BWD-E.

- F930GOT-BBD-K-E INSTALLATION MANUAL (No. JY997D02501)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F930GOT-BBD-K-E.

- F940GOT INSTALLATION MANUAL (No. JY992D94201)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F94☐GOT-SWD-E and F94☐GOT-LWD-E.

- F940WGOT INSTALLATION MANUAL (No. JY992D93901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F940WGOT-TWD-E.

- F940 HANDY GOT HARDWARE MANUAL (No. JY992D86901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F94☐GOT-SBD-H-E and F94☐GOT-LBD-H-E.

- F940 HANDY GOT (RH model) HARDWARE MANUAL (No. JY992D99901)
  - To learn the features of the main unit.
  - To confirm the specifications of the main unit.
  - To learn the name of each part of the main unit.
  - To learn how to install the main unit and wire the power supply.
  - To look at the external dimensions diagram of the main unit.

It is included with the F94☐GOT-SBD-RH-E and F94☐GOT-LBD-RH-E.

**OPERATION MANUAL of GOT**

Describes how to operate system screens and how to create and operate user screens display, and covers all of the F930GOT, F940GOT and Handy GOT Series.

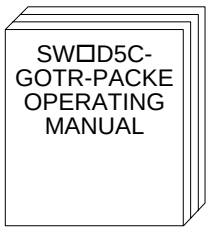
- GOT-F900 SERIES OPERATION MANUAL (No. JY992D94701) : (Essential)
  - To learn the display function of the GOT-F900.
  - To execute items in the HPP mode (such as "PROGRAM LIST" and "MONITOR").
  - To execute "DEVICE MONITOR" and display alarms.

Applicable GOT
F920GOT-BBD5-K-E
F930GOT-BWD-E
F930GOT-BBD-K-E
F94☐GOT-SWD-E
F94☐GOT-LWD-E
F940WGOT-TWD-E
F94☐GOT-SWD-H-E
F94☐GOT-LBD-H-E

**OPERATION MANUAL of screen creation software**

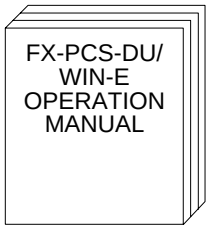
Two types of screen creation software are offered. The manual of the software you are using is required (It is included with the software.).

- GT Designer (SW□D5C-GOTR-PACKE) OPERATING MANUAL
  - To install the software to the personal computer.
  - To start up the software.
  - To learn how to connect the personal computer to the GOT.
  - To learn the screen configuration of the software.
  - To learn the outline of diversified monitoring functions.
  - To learn the procedure to display the monitor screen.
  - To learn how to use the help function.




It is included with the SW□D5C-GOTR-PACKE.

- FX-PCS-DU/WIN-E OPERATION MANUAL (No: JY992D68301)
  - To install the software to the personal computer.
  - To start up the software.
  - To learn how to connect the personal computer to the GOT.
  - To learn the screen configuration of the software.
  - To learn how to use the help function.



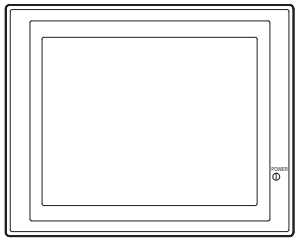

It is included with the FX-PCS-DU/WIN-E.

## 1.2 Abbreviations, Generic Names and Terms Used in This Manual

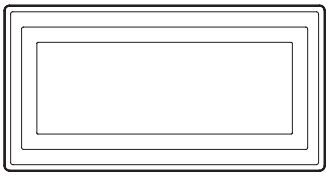
Abbreviations, generic names and terms used in this manual are shown below.

### 1.2.1 Types and Names of GOT-F900 Series

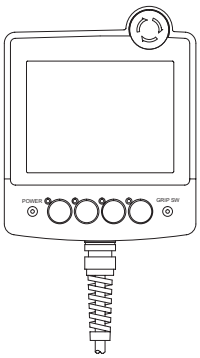
F940GOT



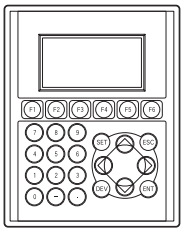
F930GOT



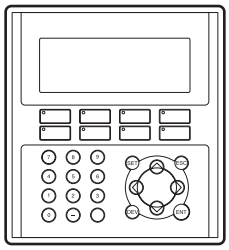
Handy GOT



F920GOT-K



F930GOT-K



| Generic name | Name | Model name | Built-in I/F | Remarks |
|---|---|---|---|---|
| GOT-F900 Series | F940WGOT | F940WGOT-TWD | RS-422 ×1<br>RS-232C ×2 | Japanese models |
| | | F940WGOT-TWD-E,F940WGOT-TWD-C | | World spec models |
| | F940GOT | F940GOT-SWD,F940GOT-LWD | RS-422 ×1<br>RS-232C×1 | Japanese models |
| | | F940GOT-SWD-E,F940GOT-LWD-E<br>F940GOT-SWD-C,F940GOT-LWD-C | RS-422 ×1<br>RS-232C×1 | World spec models |
| | F943GOT | F943GOT-SWD,F943GOT-LWD | RS-232C ×2 | Japanese models |
| | F930GOT-K (With various key-pads) | F930GOT-BBD-K | RS-422 ×1<br>RS-232C×1 | Japanese models |
| | | F930GOT-BBD-K-E | | World spec models |
| | | F930GOT-BBD-K-C | | World spec models |
| | F930GOT | F930GOT-BWD | RS-422 ×1<br>RS-232C ×1 | Japanese models |
| | | F930GOT-BWD-E<br>F930GOT-BWD-C<br>F930GOT-BWD-T | | World spec models |
| | F933GOT | F933GOT-BWD | RS-232C ×2 | Japanese models |
| | F920GOT-K (With various key-pads) | F920GOT-BBD5-K | RS-422 ×1<br>RS-232C ×1 | Japanese models |
| | | F920GOT-BBD-K-E | | World spec models |
| | | F920GOT-BBD-K-C | | World spec models |
| | F940 handy GOT *1 | F940GOT-SBD-H,F940GOT-LBD-H<br>F940GOT-SBD-RH,F940GOT-LBD-RH | RS-422 ×1 | Japanese models |
| | | F940GOT-SBD-H-E,F940GOT-LBD-H-E<br>F940GOT-SBD-RH-E,F940GOT-LBD-RH-E | | World spec models |
| | F943 handy GOT *1 | F943GOT-SBD-H,F943GOT-LBD-H<br>F943GOT-SBD-RH,F943GOT-LBD-RH | RS-232C ×1 | Japanese models |
| | | F943GOT-SBD-H-E,F943GOT-LBD-H-E<br>F943GOT-SBD-RH-E,F943GOT-LBD-RH-E | | World spec models |

*1 In addition to the interface shown in the table, an RS-232C interface is built in for connection of a personal computer.

- Both the F940 Handy GOT and the F943 Handy GOT are generally called "Handy GOT".

### 1.2.2 Information Offered by Model Name

GOT

F9□□□GOT-○○○○-○-○-○

1) 2) 3) 4) 5) 6) 7) 8) 9)

1) LC display size
2: 3 in.
3: 4 in.
4: 6 in. (7 in. in F940WGOT)

2) PLC connection specifications
0: RS-422,RS-232C Interface
3: RS-232C × 2ch interface
In the case of Handy GOT
0: RS-422 Interface
3: RS-232C interface

3) Screen shape
None: Standard
W: Wide screen

4) Screen color
T: TFT type 256-color LCD
S: STN type 8-color LCD
L: STN type black-and-white LCD
B: STN type blue LCD

5) Panel color
W: White
B: Black

6) Input power supply specifications
D: 24V DC
D5: 5V DC

7) Various keys
None: Not with a key
K: With a key

8) Type
None: Panel face installation type
H: Handy GOT
RH: Handy GOT

9) Overseas models
E:
C:
T:
In-built fonts vary depending on model.
For details, refer to the next page.

### 1.2.3 In-built Fonts of Graphic Operation Terminal (Japanese/Overseas product)

Carefully confirm the in-built fonts when selecting a model from the F920GOT-K or F930GOT(-K).

| Name | GOT model name *1 | Language displayed on system screen *2 | | In-built fonts (user screen) *3 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Japanese | | English | Korean | Chinese | | Western Europe | | | | | | | |
| | | At factory | Can be switched to | Shift JIS level-1 kanji set | Shift JIS level-2 kanji set | | | Simplified | Traditional | Italian | Dutch | Swedish | Spanish | German | Portuguese | French |
| F940WGOT | F940WGOT-TWD | Japanese | English | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F940WGOT-TWD-E | English | Japanese | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F940WGOT-TWD-C | Chinese (Simplified) | English | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| F940GOT | F94□GOT-SWD | Japanese | English | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F94□GOT-LWD | | | | | | | | | | | | | | | |
| | F940GOT-SWD-E | English | Japanese | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F940GOT-LWD-E | | | | | | | | | | | | | | | |
| | F940GOT-SWD-C | Chinese (Simplified) | English | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F940GOT-LWD-C | | | | | | | | | | | | | | | |
| F930GOT-K | F930GOT-BBD-K | Japanese | English | ✓ | – | ✓ | – | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F930GOT-BBD-K-E | English | Japanese | ✓ | – | ✓ | ✓*4 | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F930GOT-BBD-K-C | Chinese (Simplified) | English | – | – | ✓ | – | ✓ | – | – | – | – | – | – | – | – |
| F930GOT | F93□GOT-BWD | Japanese | English | ✓ | – | ✓ | – | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F930GOT-BWD-E | English | Japanese | ✓ | – | ✓ | ✓*4 | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F930GOT-BWD-C | Chinese (Simplified) | English | – | – | ✓ | – | ✓ | – | – | – | – | – | – | – | – |
| | F930GOT-BWD-T | English | – | – | – | ✓ | – | – | ✓ | – | – | – | – | – | – | – |
| F920GOT-K | F920GOT-BBD5-K | Japanese | English | ✓ | ✓ | ✓ | – | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F920GOT-BBD5-K-E | English | Japanese | ✓ | ✓ | ✓ | ✓*4 | – | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F920GOT-BBD5-K-C | Chinese (Simplified) | English | – | – | ✓ | – | ✓ | ✓ | – | – | – | – | – | – | – |
| Handy GOT | F94□GOT-SBD-H | Japanese | English | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F94□GOT-LBD-H | | | | | | | | | | | | | | | |
| | F94□GOT-SBD-H-E | English | Japanese | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F94□GOT-LBD-H-E | | | | | | | | | | | | | | | |
| Handy GOT (RH model) | F94□GOT-SBD-RH | Japanese | English | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F94□GOT-LBD-RH | | | | | | | | | | | | | | | |
| | F94□GOT-SBD-RH-E | English | Japanese | ✓ | – | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | F94□GOT-LBD-RH-E | | | | | | | | | | | | | | | |

*1 □ in the GOT model name indicates 0 or 3. (The in-built interface varies as shown below.)

| Name | 0 | 3 |
|---|---|---|
| F940GOT, F930GOT | RS-422(1), RS-232C(1) | RS-232C(2) |
| Handy GOT, Handy GOT RH model | RS-422(1) | RS-232C(1) |

*2 A change on a system screen can be made in the screen creation software or GOT main unit.

*3 The font which can be displayed on a user screen
Depending on the OS, the font may not be displayed even if it is built in the GOT-F900.

*4 Only the Hangul is available.

### 1.2.4 Abbreviation List

| Abbreviation/generic name/term | | Description |
|---|---|---|
| CPU | QCPU(Q mode) | Generic name of Q00JCPU, Q00CPU, Q01CPU, Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU and Q25HCPU units |
| | QCPU(A mode) | Generic name of Q02CPU-A, Q02HCPU-A and Q06HCPU-A units |
| | QCPU | Generic name of QCPU (Q mode) and QCPU (A mode) units |
| | QnACPU(large type) | Generic name of Q2ACPU, Q2ACPU-S1, Q3ACPU, Q4ACPU and Q4ARCPU units |
| | QnACPU(small type) | Generic name of Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU and Q2ASHCPU-S1 units |
| | QnACPU | Generic name of QnACPU (large type) and QnACPU (small type) units |
| | AnUCPU | Generic name of A2UCPU, A2UCPU-S1, A3UCPU and A4UCPU units |
| | AnACPU | Generic name of A2ACPU, A2ACPU-S1 and A3ACPU units |
| | AnNCPU | Generic name of A1NCPU, A2NCPU, A2NCPU-S1 and A3NCPU units |
| | ACPU(large type) | Generic name of AnUCPU, AnACPU and AnNCPU units |
| | A2US(H)CPU | Generic name of A2USCPU, A2USCPU-S1 and A2USHCPU-S1 units |
| | AnS(H)CPU | Generic name of A1SCPU, A1SHCPU and A2SCPU units |
| | A1SJ(H)CPU | Generic name of A1SJCPU-S3 and A1SJHCPU units |
| | ACPU(small type) | Generic name of A2US(H)CPU, AnS(H)CPU and A1SJ(H)CPU units |
| | ACPU | Generic name of ACPU (large type), ACPU (small type) and A1FXCPU units |
| | FX0 Series | Generic name of FX0 Series main units |
| | FX0S Series | Generic name of FX0S Series main units |
| | FX1S Series | Generic name of FX1S Series main units |
| | FX0N Series | Generic name of FX0N Series main units |
| | FX1N Series | Generic name of FX1N Series main units |
| | FX1 Series | Generic name of FX1 Series main units |
| | FX Series | Generic name of FX Series main units |
| | FX2 Series | Generic name of FX2 Series main units |
| | FX2N Series | Generic name of FX2N Series main units |
| | FX2C Series | Generic name of FX2C Series main units |
| | FX2NC Series | Generic name of FX2NC Series main units |
| | FXCPU | Generic name of FX0/FX0S/FX1S/FX0N/FX1N/FX1/FX/FX2/FX2N/FX2C/ FX2NC Series main units |
| | FX Series GM positioning unit | FX-10GM, FX-20GM, E-20GM, FX2N-10GM and FX2N-20GM |
| | Motion controller CPU | Generic name of A171SCPU-S3, A171SHCPU, A172SHCPU and A273UHCPU |
| | FREQROL Series | A500/E500/S500 Series inverter |

| Abbreviation/generic name/term | | Description |
|---|---|---|
| PLC by other companies | PLC by Omron | Generic name of C200H, CQM1, CS1 and A273UHCPU |
| | PLC by Fuji Electric | Generic name of FLEX-PC N Series (NB-RS1-AC, NB-RS1-DC, NJ-RS4, NJ-RS1 and NJ-RS2) |
| | PLC by Yasukawa Electric | Generic name of machine controllers CP-9200SH, MP-920 and MP-930 |
| | PLC by Matsushita Electric Works | FP0, FP2SH and FP2SH+FP2-CCU |
| | PLC by Allen Bradley | Generic name of SLC 5/03 and SLC 5/04 |
| | PLC by Siemens | Generic name of SIMATIC S7-200, S7-300 and S7-400 |
| | PLC by another company | Generic name of PLC manufactured by Omron, Fuji Electric, Yasukawa Electric, Allen-Bradley or Siemens |
| Others | OS | Abbreviation of GOT system software |
| | GT Designer | Abbreviation of screen creation software for GOT-A900/GOT-F900 Series<br>GT Works / SW□D5C-GTWORKS-E / Integrated screen development software for GOT900 Series (SW□D5C-GOTR-PACKE + GT Simulator) (English version)<br>GT Designer / SW□D5C-GOTR-PACKE / Screen creation software for GOT900 Series SW□D5C-GOTR-PACKE (English version)<br>GT Designer / SW□D5C-GOTR-PACKEV / Software dedicated to version upgrade from conventional version to latest SW□D5C-GOTR-PACKE (English version) |
| | DU/WIN | Abbreviation of screen creation software FX-PCS-DU/WIN-E for GOT-F900 Series |
| | FX/WIN | Abbreviation of programming software FX-PCS/WIN-E for FX Series PLC |
| | Data conversion software | Abbreviation of data conversion software GOT Converter for GOT900 Series |
| | Debugging software | Abbreviation of debugging software GOT Debugger |
| | Object | Parts and setting data on the screen. |
| | Windows95 | Abbreviation of Microsoft Windows95 |
| | Windows98 | Abbreviation of Microsoft Windows98 |
| | Windows NT4.0 | Abbreviation of Microsoft Windows NT Workstation 4.0 |
| | Windows 2000 | Abbreviation of Microsoft Windows 2000 Professional |
| | Windows | Generic name of Windows95, Windows98, Windows NT4.0 and Windows2000 |
| | Personal computer (PC) | Personal computer compatible with Windows to which GT Designer or FX-PCS-DU/WIN-E is installed |

This manual describes the following product in the new name.

| Conventional name | New name | Remarks |
|---|---|---|
| GPPW | GX Developer | Abbreviation of software package SW□D5C-GPPW-E |

| Abbreviation/generic name/term | | Description |
|---|---|---|
| Connection diagram | BK | Black |
| | W | White |
| | Y | Yellow |
| | BR | Brown |
| | BL | Blue |
| | GY | Gray |
| | O | Orange |
| | PL | Purple |
| | PK | Pink |
| | FGR | Fresh green |
| | SB | Sky blue |
| | R | Red |
| | GR | Green |

# 2. Outline

This section describes the outline of PLC, bar code reader, printer, etc. which can be connected to the GOT-F900.

## 2.1 Connection Type Supported by GOT-F900

The table below shows connection types supported by the GOT-F900 having the lastest OS version.

### 2.1.1 GOT type list and index

| Connected equipment | Connection destination | Description | Reference |
|---|---|---|---|
| F920GOT-K,<br>F930GOT, F930GOT-K,<br>F940GOT, F940WGOT | – | Name of each part, installation and power supply wiring | Chapter 4 |
| Handy GOT | – | Dedicated wiring and functions of Handy GOT such as name of each part, installation, cables dedicated to Handy GOT and switch control method | Chapter 5 |
| Connection of peripheral equipment | Peripheral equipment | Transfer of screen data and sequence programs through connection of personal computer | Chapter 6 |
| Connection of two or more GOT units | GOT-GOT | Wiring when connecting up to four GOT units | Chapter 7 |

### 2.1.2 Connection type list and index

"✓" indicates can connect. "–" indicates cannot connect.

| Manufacturer | Connected equipment | Connection destination | Transmission specifications | | Connection of two or more GOT units | Reference |
|---|---|---|---|---|---|---|
| | | | RS-422 | RS-232C | | |
| PLC by Mitsubishi | FX Series | CPU direct connection | ✓ | ✓ | ✓ | Chapter 8 |
| | A Series<br>Motion controller<br>Q Series (A mode) | CPU direct connection | ✓ | – | ✓ | Chapter 9 |
| | | A computer link | ✓ | ✓ | – | |
| | QnA Series | CPU direct connection | ✓ | – | ✓ | Chapter 10 |
| | | A computer link | ✓ | ✓ | – | |
| | | QnA computer link | ✓ | ✓ | ✓ | |
| | Q Series (Q mode) | CPU direct connection | – | ✓ | ✓ | Chapter 11 |
| | | Serial communication unit (CPU direct connection) | ✓ | ✓ | ✓ | |
| | Q Series (multi CPU) | CPU direct connection | – | ✓ | ✓ | Chapter 11 |
| | | Serial communication unit (CPU direct connection) | ✓ | ✓ | ✓ | |
| | FX positioning unit (10GM/20GM) | CPU direct connection | ✓ | – | – | Chapter 12 |
| | FREQROL Series (inverter) | CPU direct connection | ✓ | – | – | Chapter 13 |
| PLC by other companies | General-purpose equipment such as microcomputer board | CPU direct connection | ✓ | ✓ | ✓ | Chapter 14 |
| | SYSMAC C Series by Omron | Upper link | ✓ | ✓ | – | Chapter 15 |
| | FLEX-PC N Series by Fuji Electric | Link unit | ✓ | ✓ | – | Chapter 16 |
| | Machine controller by Yasukawa Electric | CPU direct connection (memo bus) | – | ✓ | – | Chapter 17 |
| | | Memo bus unit | ✓ | ✓ | – | |
| | FP Series by Matsushita Electric Works | CPU direct connection | – | ✓ | – | Chapter 18 |
| | SLC500/MicroLogix Series by Allen-Bradley | CPU direct connection | – | ✓ | – | Chapter 19 |
| | SIMATIC S7-200<br>SIMATIC S7-300<br>Series by Siemens | CPU direct connection | – | ✓ | – | Chapter 20 |
| Others | General-purpose printer | – | – | ✓ | – | Chapter 21 |
| | Bar code reader | – | – | ✓ | – | Chapter 22 |
| CC-Link (F9GT-CCL) | Q Series (Q mode) | CPU direct connection | ✓ | – | – | Chapter 23 |
| | Q Series (multi CPU) | CPU direct connection | ✓ | – | – | |

- For the details of the connection type in accordance with the OS version of the GOT-F900, refer to section 3.1.

## 2.2 Outline of Connection Types

This section explains by means of diagrams the connection types of PLC, bar code reader, printer and personal computer (for sequence programs) connected to the GOT-F900.
The same type of equipment cannot be connected. (For example, connection of two PLC units or connection of two bar code readers are not allowed.)
The compatible connection types vary according to the model of the GOT-F900. For details, refer to the specifications shown later.

### 2.2.1 PLC by Mitsubishi

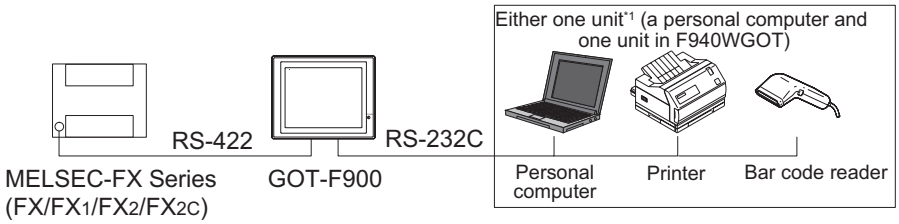
This section describes the outline of connection of the GOT-F900 to the PLC manufactured by Mitsubishi.

" " indicates that a PLC programming tool (personal computer) can be connected.
(Program transfer and monitoring are available using the programming software for the FX/A/QnA/Q Series.)

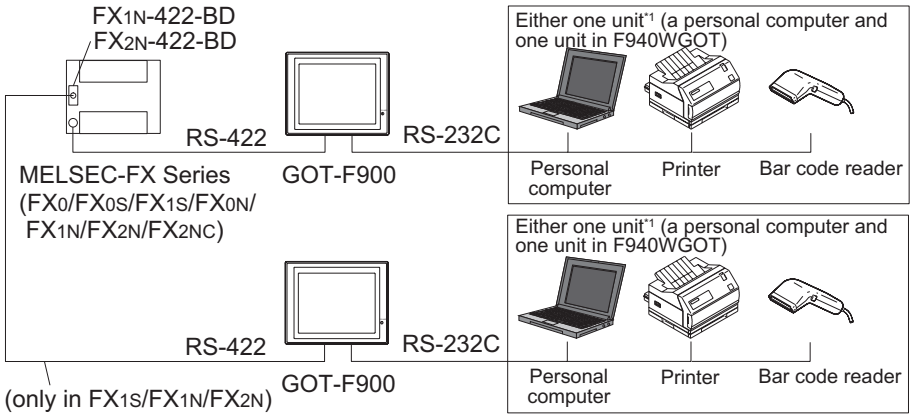
**FX Series PLC**

**1) CPU direct connection (RS-422)**

GOT-F900 is connected to the programming port of the FX Series PLC. When a personal computer is connected to the GOT-F900, sequence programs can be created.



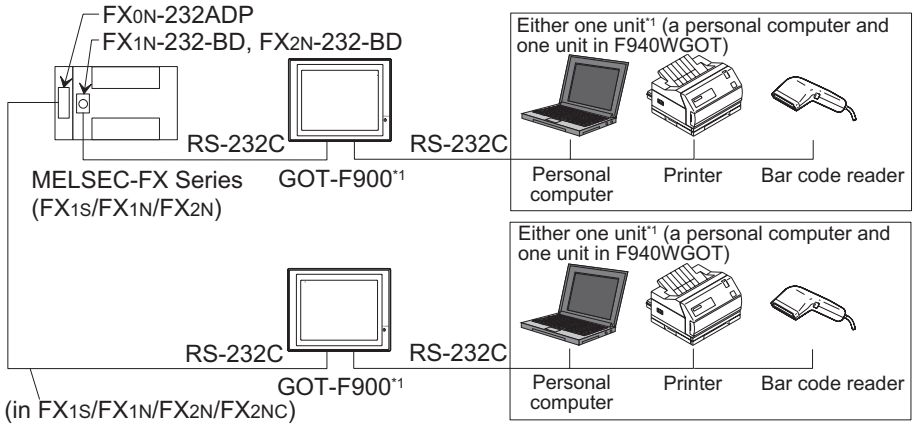

By attaching the optional RS-422 communication board, a programming port can be added. As a result, a GOT-F900 or personal computer (for sequence programs) can be connected to each port.




*1 Excluding the F920GOT-K

**2) CPU direct connection (RS-232C)**

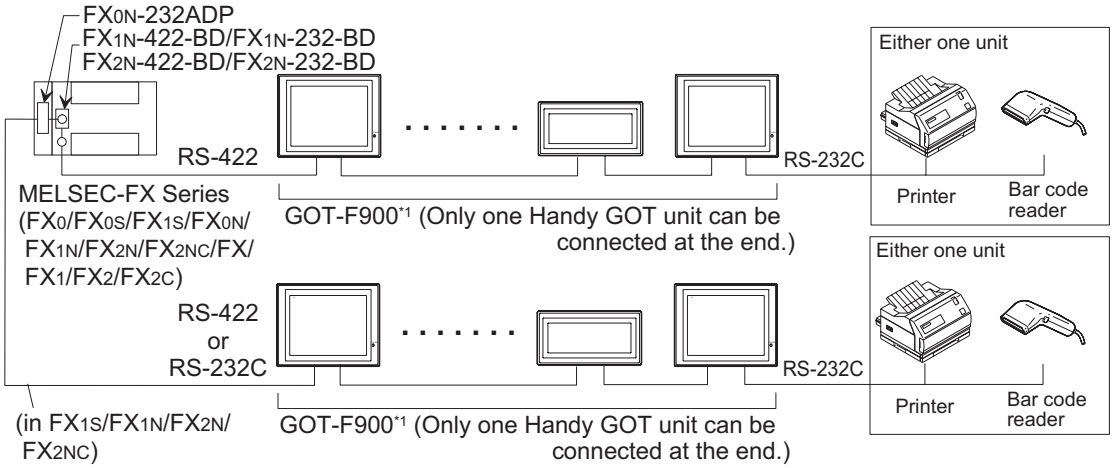
By attaching the optional RS-232C communication board, a programming port can be added. As a result, the GOT-F900 or personal computer (for sequence programs) can be connected to each port. (A personal computer, printer or bar code reader can be connected only when the GOT is equipped with two RS-232C channels.)




*1 Excluding the F920GOT-K

**3) Connection of two or more GOT units**

Up to four GOT-F900 units can be connected to the programming port or the optional communication port of the FX Series PLC.

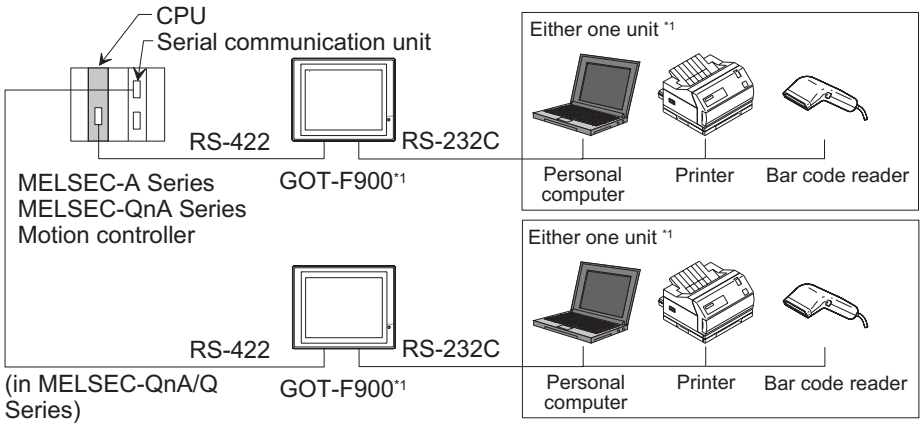



*1 Excluding the F920GOT-K

### Q/QnA/A Series PLC

#### 1) CPU direct connection (RS-422)

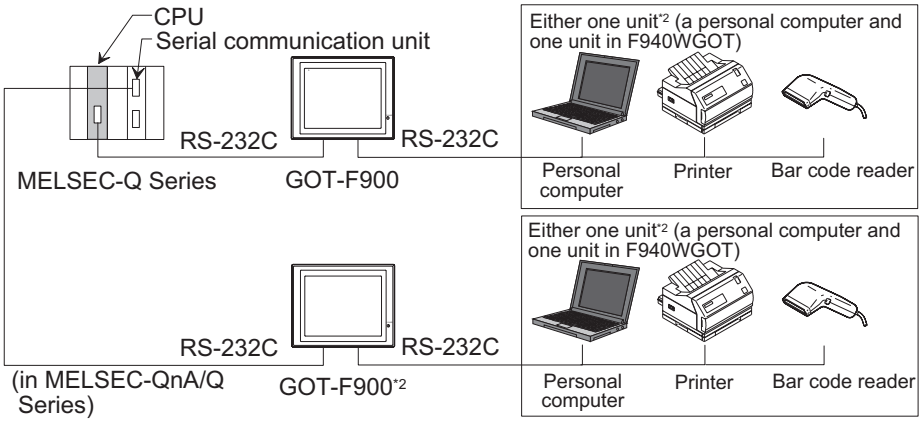
GOT-F900 is connected to the programming port of the A/QnA Series PLC or the motion controller.
When a personal computer is connected to the GOT-F900, programs can be created.
The serial communication unit of the Q/QnA Series PLC is connected through CPU direct connection. The GOT-F900 can be connected to only either one between two ports. (Connecting two GOT-F900 units to one serial communication unit is not allowed.)




*1 Excluding the F920GOT-K

#### 2) CPU direct connection (RS-232C)

GOT-F900 is connected to the programming port of the Q Series PLC (Multi-CPU system applicable*1) or the serial communication unit of the Q/QnA Series PLC.
When a personal computer is connected to the GOT-F900, programs can be created.
The serial communication unit of the Q/QnA Series PLC is connected through CPU direct connection. The GOT-F900 can be connected to only either one between two ports. (Connecting two GOT-F900 units to one serial communication unit is not allowed.)
(A personal computer, printer or bar code reader can be connected only when the GOT is equipped with two RS-232C channels.)

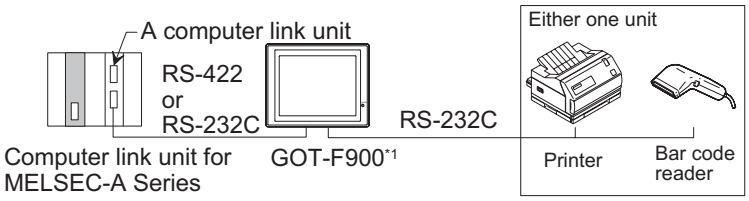



*1 GOT-F900 can be connected to the multi-CPU system only when the connection consists of QCPU. (A motion controller or CPU of a personal computer cannot be used concurrently.)

*2 Excluding the F920GOT-K

**3) A computer link connection**

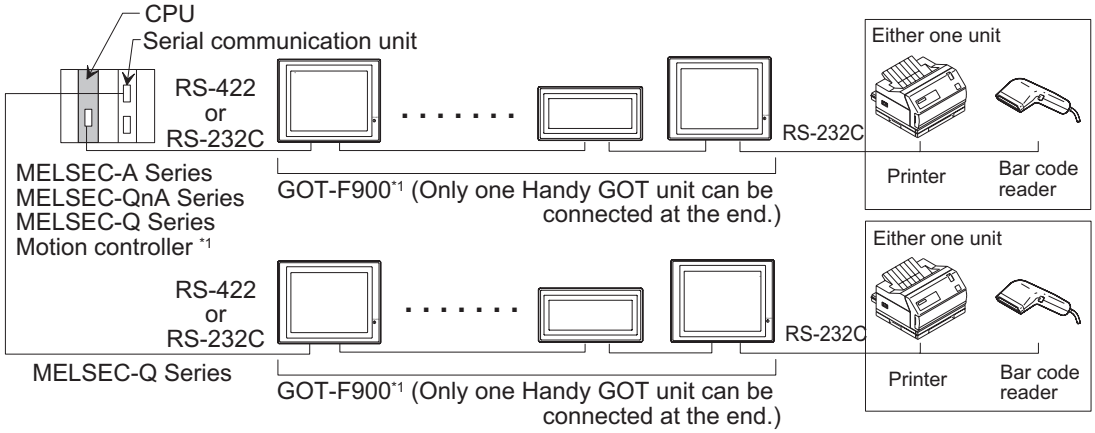
GOT-F900 is connected to the A/QnA Series PLC by attaching the A CPU computer link unit.




*1 Excluding the F920GOT-K

**4) Connection of two or more GOT units**

In the A/QnA Series PLC, up to four GOT-F900 units can be connected to programming ports (RS-422) of the CPU.
In the QnA/Q Series PLC, to each of the CPU programming port (RS-232C) and the attached serial communication unit, up to four GOT-F900 units can be connected.
The serial communication unit of the Q/QnA Series PLC is connected through CPU direct connection. The GOT-F900 can be connected to only either one between two ports. (Connection of two GOT-F900 units to one serial communication unit is not allowed.)

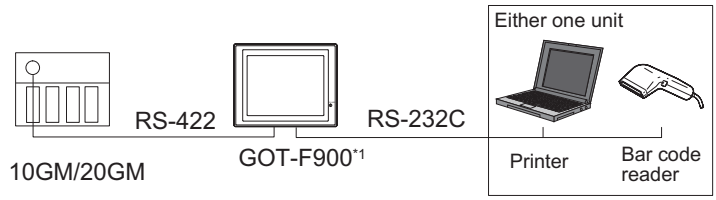



*1 Excluding the F920GOT-K

**FX positioning unit (10GM/20GM)**

CPU direct connection (RS-422)

GOT-F900 is connected to the programming port of the FX Series positioning unit (10GM/20GM).
(A personal computer, printer or bar code reader can be connected only when the GOT is equipped with RS-422 and RS-232C.)

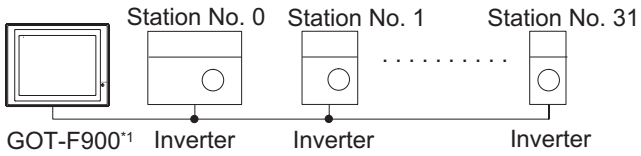



*1 Excluding the F920GOT-K

**FREQROL Series**

CPU direct connection (RS-422)

GOT-F900 is connected to the (built-in) PU port of the FREQROL Series inverter.
In the A500 Series, the GOT-F900 can be connected also to the computer link option (FR-A5NR).




One GOT-F900 unit can control up to 10 inverters.

*1 Excluding the F920GOT-K

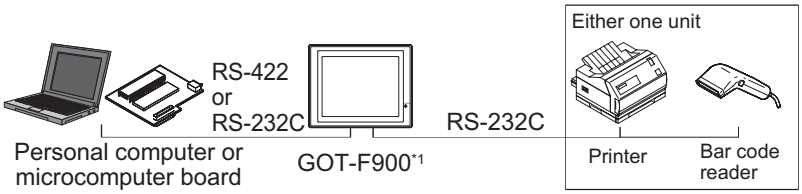
## 2.2.2 PLC by Other Companies

This section describes the outline of connection of the GOT-F900 to the PLC manufactured by other companies.

**General-purpose equipment**

**1) Microcomputer connection**

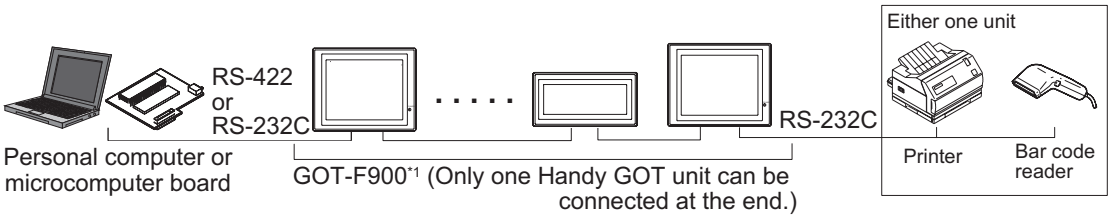
The GOT-F900 can be connected to the serial communication port of a personal computer or microcomputer board.




*1 Excluding the F920GOT-K

**2) Connection of two or more GOT units**

Up to four GOT-F900 units can be connected to the serial communication connector of a personal computer or microcomputer board.

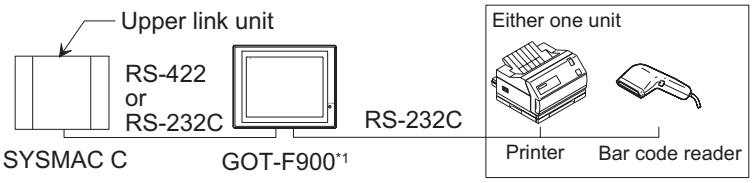



*1 Excluding the F920GOT-K

**PLC by Omron**

Upper link connection

One GOT-F900 unit can be connected to a port having the upper link communication function of the SYSMAC C Series (C200H/CQM1/CS1).

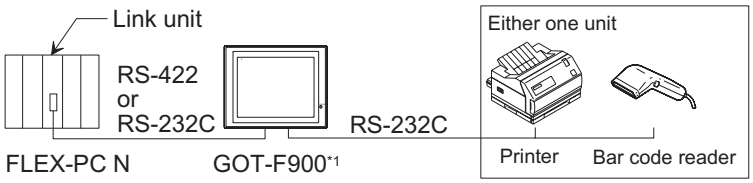



*1 Excluding the F920GOT-K

**PLC by Fuji Electric**

Link unit connection

One GOT-F900 unit can be connected to the link unit of the FLEX-PC N Series (NB/NJ/NS) PLC.

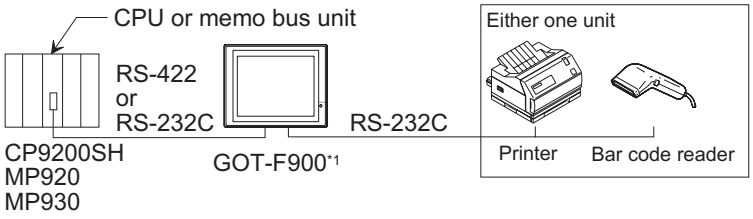



*1 Excluding the F920GOT-K

**PLC by Yasukawa Electric**

Memo bus unit connection

One GOT-F900 unit can be connected to the MEMOBUS port of the machine controller or the memo bus unit.

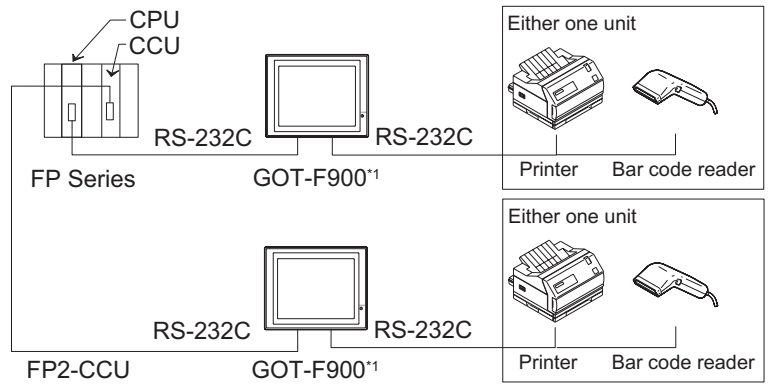



*1 Excluding the F920GOT-K

**PLC by Matsushita Electric Works**

CPU direct connection (RS-232C)

One GOT-F900 unit can be connected to the FP Series CPU or computer communication unit.

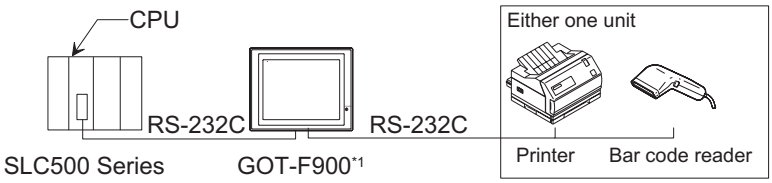



*1 Excluding the F920GOT-K

**PLC by Allen-Bradley**

CPU direct connection (RS-232C)

One GOT-F900 unit can be connected to the SLC500/MicroLogix Series CPU.
(A personal computer, printer or bar code reader can be connected only when the GOT is equipped with two RS-232C channels.)

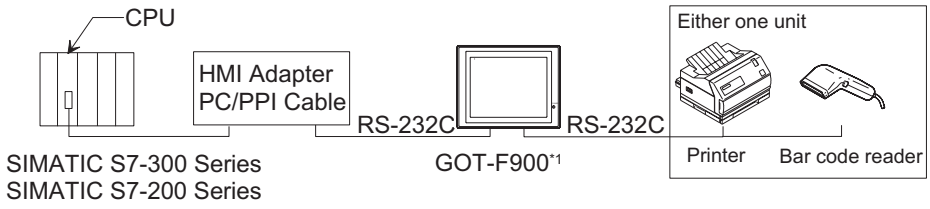



*1 Excluding the F920GOT-K

**PLC by Siemens**

CPU direct connection (RS-232C)

By connecting the HMI adapter to the SIMATIC S7-300 Series CPU, one GOT-F900 unit can be connected to the SIMATIC S7-300 Series CPU.
By connecting the PC/PPI cable to the SIMATIC S7-200 Series CPU, one GOT-F900 unit can be connected to the SIMATIC S7-300 Series CPU.
(A personal computer, printer or bar code reader can be connected only when the GOT is equipped with two RS-232C channels.)




*1 Excluding the F920GOT-K

## 2.2.3 Others

Not only the PLC, a printer or bar code reader can be connected to the GOT-F900.
The connection shown below is available also in the Handy GOT. However, because the rear panel of the Handy GOT must be removed when a cable is connected to the RS-232C connector, the waterproof ability and the operability (operation of the Handy GOT while it is held by hand) are lost. Accordingly, the connection shown below is not practical for the Handy GOT.

**Printer**

Connection of printer (RS-232C)

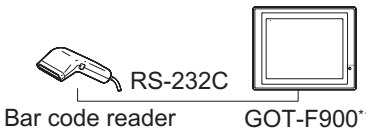
When a printer is connected to the GOT-F900, the alarms and contents of screens (as hard copy) can be printed.

*1 Excluding the F920GOT-K and Handy GOT

**Bar code reader**

Connection of bar code reader

When a bar code reader is connected to the GOT-F900, bar codes can be read.




*1 Excluding the F920GOT-K and Handy GOT

# MEMO

# 3. Specifications

This chapter describes the specifications in accordance with the version and the electrical hardware specifications related to connection of the GOT-F900.
In this chapter, you can confirm the specifications of equipment to be connected or devices to be monitored by the software.

## 3.1 OS Version and Correspondence to Connected Equipment of GOT-F900

Some equipment (PLC manufactured by Mitsubishi or other companies, microcomputer board, bar code reader, printer, etc.) cannot be connected depending on the OS (operating system) version of the GOT-F900.
In this section, you can check the OS version, and check whether it corresponds to the equipment to be connected.

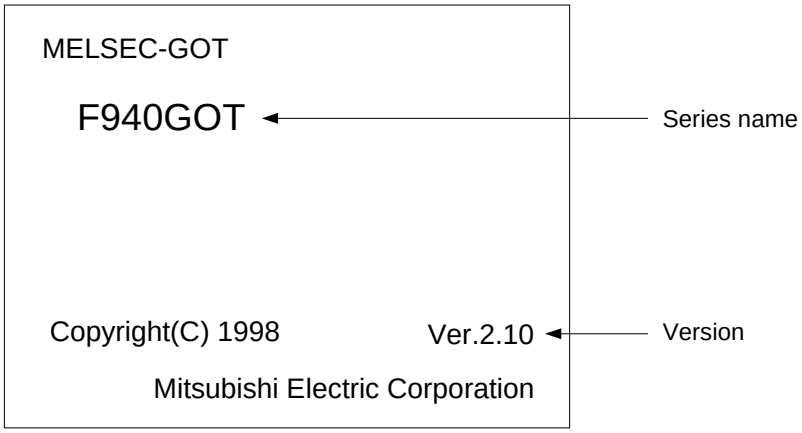
**OS type**

There are following five types of OS.

| GOT-F900 Series | Name | Remarks |
|---|---|---|
| F940WGOT | 940W system | |
| F940GOT, Handy GOT | 940 system | |
| F930GOT | 930 system | |
| F930GOT-K | 930 system | Ver. 4.60 is the first product. |
| F920GOT-K | 920 system | |

### 3.1.1 How to Confirm OS Version of GOT-F900

When the power of the GOT-F900 is turned on, the screen shown below is displayed for several seconds to indicate the series name and the version number ("version 2.10" in the lower right position). (The period of time to be displayed can be changed by the screen creation software or the GOT.)




On the rear panel of the GOT-F900 main unit, the nameplate indicating the manufacturer's serial number, the model name and the OS version is adhered. However, because the OS can be upgraded, it is recommended to confirm it using the method above.

### 3.1.2 PLC Manufactured by Mitsubishi

| Connected equipment name and series name | | RS-232C/ RS-422 | OS version | | | | Connection of two or more GOT units | Connection type name | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | 940W system | 940 system | 930 system | 920 system | | | |
| FX | MELSEC-F FX Series (CPU direct connection)<br><br>FX0,FX0S,FX1S,FX0N,FX1N,<br>FX2N,FX2NC<br>FX,FX1,FX2,FX2C<br>FX2N +FX2N-422-BD<br>FX1S +FX1N-422-BD<br>FX1N +FX1N-422-BD | RS-422 | 1.00 or later | 1.00 or later | 1.00 or later | 1.00 or later | ✓*1 | FXCPU direct connection (RS-422) | 8.2.1 |
| | MELSEC-F FX Series (CPU direct connection)<br><br>FX1S+FX1N-CNV-BD+FX0N-232ADP<br>FX1N+FX1N-CNV-BD+FX0N-232ADP<br>FX2N+FX2N-CNV-BD+FX0N-232ADP<br>FX1S+FX1N-232-BD<br>FX1N+FX1N-232-BD<br>FX2N+FX2N-232-BD<br>FX1NC+FX0N-232ADP<br>FX2NC+FX0N-232ADP | RS-232C | 1.00 or later | 1.00 or later | — | ✓ | FXCPU direct connection (RS-232C) | 8.2.2 |
| A | MELSEC-A Series (CPU direct connection)<br><br>AnN, AnA, AnS, AnSJ, AnSH<br>A1SH, A2C, A2CJ, A0J2H, AnU<br>A2US(S1), A2USH, A1FX | RS-422 | 1.00 or later | 1.00 or later | 1.00 or later | 1.00 or later | ✓*1 | ACPU direct connection | 9.2.1 |
| | Motion controller (CPU direct connection)<br><br>A171SCPU-S3, A171SHCPU<br>A172SHCPU, A273UHCPU | | | | | — | | | |
| | MELSEC-A Series (computer link connection)<br>Computer link unit<br><br>AJ71UC24, A1SJ7IUC24-R2/R4<br>A1CPUC24-R2, A2CCPU24 | RS-422 | | 1.00 or later | 1.00 or later | — | — | A computer link connection | 9.2.2 |
| | | RS-232C | | | | | | | 9.2.3 |
| QnA | MELSEC-QnA/QnAS Series (CPU direct connection)<br><br>QnACPU, Q4ARCPU, Q2ACPU,<br>Q2AHCPU, Q2ASCPU,<br>Q2ASH(S1)CPU | RS-422 | | 3.00 or later | 2.00 or later | 1.00 or later | ✓*1 | QnACPU direct connection | 10.2.1 |
| | MELSEC-QnA/QnAS Series (CPU direct connection)<br>Serial communication unit<br>AJ71QC24, AJ71QC24-R2,<br>AJ71QC24-R4, A1SJ71QC24,<br>A1SJ71QC24-R2 | RS-422 | | 3.00 or later | 2.00 or later | — | ✓ | QnA computer link connection | 10.2.2 |
| | | RS-232C | | | | | | | 10.2.3 |

| Connected equipment name and series name | | RS-232C/ RS-422 | OS version | | | | Connection of two or more GOT units | Connection type name | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | 940W system | 940 system | 930 system | 920 system | | | |
| Q | MELSEC-Q Series (CPU direct connection)<br>Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU | RS-232C | 1.00 or later | 4.10 or later | 2.20 or later | 1.00 or later | ✓*1 | QCPU direct connection | 11.2.1 |
| | MELSEC-Q Series (CPU direct connection)<br>Q00JCPU, Q00CPU, Q01CPU<br>Q multiple PLC system Ver. B or later (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU) | RS-232C | 1.30 or later | 6.30 or later | 4.30 or later | 1.00 or later | | | 11.2.1 |
| | MELSEC-Q Series (CPU direct connection)<br>Serial communication unit<br>QJ71C24, QJ71C24-R2 | RS-422 | 1.00 or later | 4.10 or later | 2.20 or later | — | | Q computer link connection | 11.2.2 |
| | | RS-232C | | | | | | | 11.2.3 |
| | MELSEC-Q Series (CPU direct connection)<br>Serial communication unit<br>Q multiple PLC system Ver. B or later (QJ71C24, QJ71C24-R2) | RS-422 | 1.30 or later | 6.30 or later | 4.30 or later | — | | | 11.2.2 |
| | | RS-232C | | | | | | | 11.2.3 |
| FX positioning | FX Series positioning unit (CPU direct connection)<br>FX2N-10GM, FX2N-20GM, FX-10GM, FX-20GM, E-20GM | RS-422 | 1.10 or later | 6.10 or later | 4.10 or later | — | — | GM direct connection | 12.2.1 |
| FREQROL | FREQROL Series inverter (CPU direct connection)<br>S500 Series (R-485 port built-in type only)<br>A500 Series (PU port, FR-A5NR)<br>E500 Series (PU port) | RS-422 | | | | — | — | INV direct connection | 13.2.1 |

✓: Can connect —: Cannot connect

*1 Excluding the 920 system

### 3.1.3 PLC Manufactured by Other Companies

| Manufacturer | Connected equipment name and series name | RS-232C/ RS-422 | OS version | | | | Connection of two or more GOT units | Connection type name | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | 940W system | 940 system | 930 system | 920 system | | | |
| General | Microcomputer (general-purpose communication)<br>Personal computer or microcomputer board equipped with RS-232C or RS-422 interface | RS-422 | 1.00 or later | 1.00 or later | 1.00 or later | — | ✓ | Micro computer connection | 14.2.1 |
| | | RS-232C | | | | | | | 14.2.2 |
| Omron | SYSMAC C Series (upper link)<br>CQM1 (built-in upper link)<br>C200H Series (C200H-LK202-V1, C200H-LK201-V1) | RS-422 | | 1.00 or later | 1.00 or later | — | — | SYSMAC C | 15.2.1 |
| | | RS-232C | | | | | | | 15.2.2 |
| | CS1 Series<br>CS1G/H-CPU□□-V1, CS1W-SCB21/41, CS1W-SCU21 | RS-422 | | 6.00 or later | 4.00 or later | — | | | 15.2.1 |
| | | RS-232C | 1.00 or later | | | | | | 15.2.2 |
| Fuji Electric | FLEX-PC N Series (link unit)<br>NB Series (NB-RS1-AC, NB-RS1-DC)<br>NJ Series (NJ-RS2,NJ-RS4)<br>NS Series (NS-RS1)<br>CPU with built-in RS-232C interface (NJ-CPU-B16) | RS-422 | | 1.00 or later | 1.00 or later | — | — | FLEX-PC N | 16.2.1 |
| | | RS-232C | | | | | | | |
| Yasukawa Electric | Machine controller (memo bus connection)<br>MP920, MP930, CP9200SH | RS-232C | | 5.00 or later | 3.00 or later | — | — | Machine controller | 17.2.1 |
| | Memo bus unit<br>CP-217IF(MP920, CP9200SH) | RS-422 | | | | | | | 17.2.2 |
| | | RS-232C | | | | | | | 17.2.3 |
| Matsushita Electric Works | FP Series (CPU direct connection)<br>FP0<br>FP2SH (FP2-CCU) | RS-232C | 1.10 or later | 6.10 or later | 4.10 or later | — | — | FP | 18.2.1 |
| Allen-Bradly | SLC500 Series (CPU direct connection)<br>SLC5/03, SLC5/04 | RS-232C | | 2.00 or later | 2.00 or later | — | — | SLC500 | 19.2.1 |
| | MicroLogix Series (CPU direct connection)<br>MicroLogix 1000 (D Series and later)<br>Micro Logix 1000 analog<br>Micro Logix 1200<br>Micro Logix 1500 | RS-232C | 1.00 or later | 6.00 or later | 4.00 or later | — | | | |
| SIEMENS AG | SIMATIC S7 Series (CPU direct connection)<br>SIMATIC S7-300, SISMATIC S7-400 | RS-232C | | 5.00 or later | 3.00 or later | — | — | SIMATIC S7 | 20.2.1 |
| | SIMATIC S7-200 | | 1.20 or later | 6.20 or later | 4.20 or later | — | | | |

✓: Can connect —: Cannot connect

### 3.1.4 Others

| Manufacturer | Connected equipment name and series name | RS-232C/ RS-422 | OS version | | | | Connection of two or more GOT units | Connection type name | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | 940W system | 940 system | 930 system | 920 system | | | |
| General | General-purpose printer ESC/P with built-in RS-232C interface | RS-232C | 1.00 or later | 1.00 or later | 1.00 or later | — | — | RS-232C general-purpose printer | 21.2.1 |
| General | Bar code reader for RS-232C connection | RS-232C | | 2.00 or later | 2.00 or later | — | — | Bar code reader | 21.2.1 |

✓: Can connect —: Cannot connect

## 3.2 Version of Screen Creation Software and Correspondence to GOT-F900

Two types of screen creation software are offered, the SW□D5C-GOTR-PACKE for those who are familiar with the GOT-A900 Series and the FX-PCS-DU/WIN-E for those who are familiar with the data access unit (FX-DU).

**Types of screen creation software**

| Screen creation software | Name | Generic name |
|---|---|---|
| SW□D5C-GTWORKS-E<br>SW□D5C-GOTR-PACKE | GT Designer | Screen creation software |
| FX-PCS-DU/WIN-E | DU/WIN | |

Applicable GOT-F900 Series models and the correspondence to the connected equipment (related to the OS version also) vary depending on the version of the screen creation software. In this section, you can check the version of your screen creation software and confirm applicable GOT models and connectable equipment.
The table in Section 3.2.2 shows the screen creation software version corresponding to each GOT-F900. The table in Section 3.2.3 shows the screen creation software version corresponding to each connected equipment. Compare these two tables. The newer version is required.

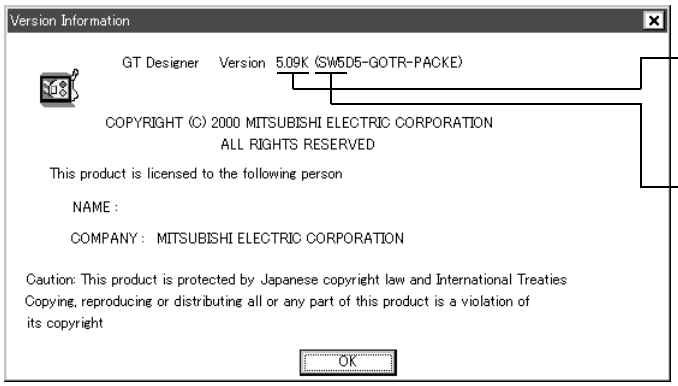
### 3.2.1 How to Conform Version of Screen Creation Software

You can confirm the version by displaying the help screen after starting up the screen creation software in the personal computer or by confirming the contents indicated on the FD or CD-ROM of the product.

**1) When confirming the version using the help function of the software**

by selecting [Help (H)]-[Version Information (A)] on the menu.
You can confirm the version of the GT Designer and the DU/WIN.

a) GT Designer


Version Information
GT Designer Version 5.09K (SW5D5-GOTR-PACKE)
COPYRIGHT (C) 2000 MITSUBISHI ELECTRIC CORPORATION
ALL RIGHTS RESERVED
This product is licensed to the following person
NAME :
COMPANY : MITSUBISHI ELECTRIC CORPORATION
Caution: This product is protected by Japanese copyright law and International Treaties
Copying, reproducing or distributing all or any part of this product is a violation of its copyright
OK

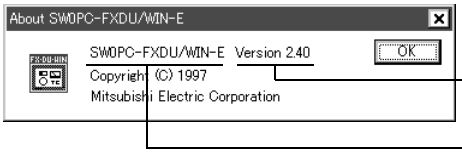
In the case of Version SW4 or former
A version
(An alphabet at the end indicates the small version.)

SW□D5C-GOTR-PACKE

"SW2" indicates the large version. An alphabet at the end indicates the small version.

In the case of Version SW5 or later
Version 5.05F
Small version
SW5

b) DU/WIN



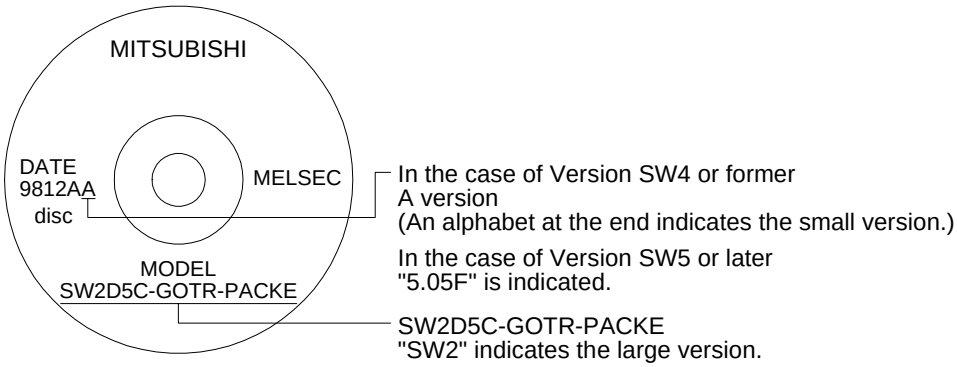

Version

Model name

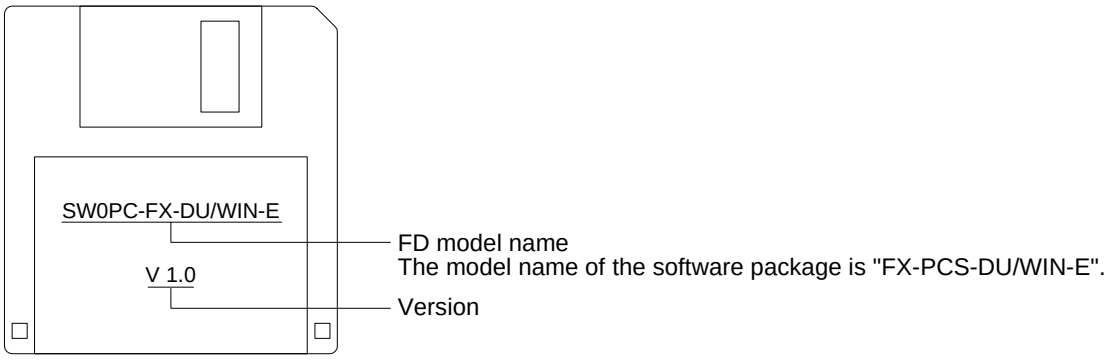
**2) When confirming the version through the contents indicated on the media**

You can confirm the version by checking the contents indicated on the media of the product.

a) GT Designer (CD-ROM)




b) DU/WIN (FD)




### 3.2.2 Screen Creation Software Version Corresponding to GOT-F900 Series

**Japanese version**

| GOT-F900 Series | SW□D5C-GOTR-PACK Version | FX-PCS-DU/WIN Version |
|---|---|---|
| F940WGOT | SW5-F (5.05F) | 2.50 |
| F940GOT | SW1-A | 2.00 |
| F943GOT | SW1-A | 2.00 |
| F930GOT-K | SW5-26C (5.26C) | – |
| F930GOT | SW1-H | 2.20 |
| F933GOT | SW1-H | 2.20 |
| F920GOT-K | SW5-26C (5.26C) | – |
| F940 Handy GOT | SW1-D | 2.10 |
| F940 Handy GOT (RH model) | SW5-F (5.05F) | 2.50 |
| F943 Handy GOT | SW1-D | 2.10 |
| F943 Handy GOT (RH model) | SW5-F (5.05F) | 2.50 |
| ET-900 | SW1-D | 2.00 |

- "□" of "SW□D5C-GOTR-PACK" indicates a number.

**English version**

| | SW□D5C-GOTR-PACKE Version | FX-PCS-DU/WIN-E Version |
|---|---|---|
| F940WGOT | SW5-F (5.05F) | 2.50 |
| F940GOT | SW1-E | 2.00 |
| F930GOT-K | SW5-26C (5.26C) | 2.70 |
| F930GOT | SW1-H | 2.30 |
| F920GOT-K | SW5-26C (5.26C) | 2.70 |
| F940 Handy GOT | SW1-D | 2.10 |
| F940 Handy GOT (RH model) | SW5-F (5.05F) | 2.50 |
| F943 Handy GOT | SW1-D | 2.10 |
| F943 Handy GOT (RH model) | SW5-F (5.05F) | 2.50 |

- "□" of "SW□D5C-GOTRE-PACK" indicates a number.

### 3.2.3 Screen Creation Software Corresponding to Each Connected Equipment

**Products in Japanese**

| Manufacturer | Connected equipment (abbreviation) | SW□D5C-GOTR-PACK Version | FX-PCS-DU/WIN Version |
|---|---|---|---|
| Mitsubishi | FXCPU direct connection | SW1-A | 2.00 |
| | ACPU direct connection | | |
| | A computer link | | |
| | QnACPU direct connection | SW2-A | 2.30 |
| | QnA computer link | | |
| | QCPU direct connection | SW4-F | 2.40 |
| | Q computer link | | |
| | QCPU direct connection (multi CPU system) | SW5-P (5.13P) | – |
| | Q computer link (multi CPU system) | | |
| | GM direct connection (FX positioning unit) | SW5-K (5.09K) | 2.50 |
| | INV direct connection (inverter) | | |
| Other companies | Microcomputer connection (general-purpose communication) | SW1-A | 2.00 |
| | SYSMAC C by Omron | SW1-A | |
| | FLEX-PC N by Fuji Electric | Not applicable | |
| | CP9200SH by Yasukawa Electric | SW4-F | 2.40 |
| | FP by Matsushita Electric Works | SW5-K (5.09K) | – |
| | SLC500 by Allen-Bradley | SW1-H | 2.30 |
| | MicroLogix by Allen-Bradley | SW5-F (5.05F) | 2.50 |
| | SIMATIC S7-300 by Siemens AG | SW5-F (5.05F) | 2.40 |
| | SIMATIC S7-200 by Siemens AG | SW5-P (5.13P) | 2.60 |
| Others | Printer (with built-in RS-232C) | SW1-A | 2.00 |
| | Bar code reader | SW1-H | 2.20*1 |
| | CC-Link | SW5-P (5.13P) | 2.40 |

- "□" of "SW□D5C-GOTR-PACK" indicates a number.

*2 The F930GOT is applicable in Version 2.30 and later.

### Products in English

| Manufacturer | Connected equipment (abbreviation) | SW□D5C-GOTR-PACKE Version | FX-PCS-DU/WIN-E Version |
|---|---|---|---|
| Mitsubishi | FXCPU direct connection | SW1-E | 2.00 |
| | ACPU direct connection | | |
| | A computer link | | |
| | QnACPU direct connection | SW2-A | 2.30 |
| | QnA computer link | | |
| | QCPU direct connection | SW4-F | 2.40 |
| | Q computer link | | |
| | QCPU direct connection (multi CPU system) | SW5-P (5.13P) | – |
| | Q computer link (multi CPU system) | | |
| | GM direct connection (FX positioning unit) | SW5-K (5.09K) | 2.50 |
| | INV direct connection (inverter) | | |
| Other companies | Microcomputer connection (general-purpose communication) | SW1-E | 2.00 |
| | SYSMAC C by Omron | | |
| | FLEX-PC N by Fuji Electric | | |
| | CP9200SH by Yasukawa Electric | SW4-F | – |
| | FP by Matsushita Electric Works | SW5-K (5.09K) | – |
| | SLC500 by Allen-Bradley | SW1-H | 2.30 |
| | MicroLogix by Allen-Bradley | SW5-F (5.05F) | 2.50 |
| | SIMATIC S7-300 by Siemens AG | SW5-F (5.05F) | 2.40 |
| | SIMATIC S7-200 by Siemens AG | SW5-P (5.13P) | 2.52 |
| Others | Printer (with built-in RS-232C) | SW1-E | 2.00 |
| | Bar code reader | SW1-H | 2.30 |

- "□" of "SW□D5C-GOTR-PACKE" indicates a number.

## 3.3 Device Names Which can be Monitored

This section explains the device range of the PLC available in the GOT-F900. The maximum device range which can be set in the screen creation software is shown here. The device specifications vary depending on the model of the PLC even if the series name is equivalent. (Example: In the FX Series, the FX1N PLC has fewer devices than in the FX2N PLC.)
When looking at the table, change the device range shown in the table with the device range available in the actually connected PLC.

### 3.3.1 Devices in GOT-F900

The table below shows intrinsic devices built in the GOT-F900.
Because these internal devices have no relevance to the devices in the connected PLC or the memory of the microcomputer board, they can be used without regard to the connected equipment.
These internal devices in the GOT-F900 can be rewritten by the status monitoring function, the switch function and the numeric value input function, and used for lamp indicator, numeric value display, switch condition, etc.

**Available screen creation software**

GT Designer from the first version
DU/WIN from Version 2.50 and later

**Allocation of devices for internal processing**

| Device name | | Available range | | Device number representation |
|---|---|---|---|---|
| Bit device | GB (GOT internal device) | GB0 to GB131 | Not available except devices in table below | Decimal |
| | | GB132 to GB255 | Available | |
| | | GB256 to GB1023 | Available (excluding the F920GOT-K) | |
| Word device | GD (GOT internal device) | GD0 to GD99 | Not available except devices in table below | Decimal |
| | | GD100 to GD127 | Available | |
| | | GD128 to GD1023 | Available (excluding the F920GOT-K) | |

- GB 0 to GB 131 and GD 0 to GD 99 are used for the processing inside the GOT-F900. Note, however, that the devices with functions shown below are available for user use.

| Device | Function |
|---|---|
| GD0 | Current time (second) |
| GD1 | Current time (minute) |
| GD2 | Current time (hour) |
| GD3 | Current time (day) |
| GD4 | Current time (month) |
| GD5 | Current time (year) |
| GD6 | Current time (day of week) |
| GD7 | Not to be used |
| GD8,GD9 | Upper limit of input numerical value (32 bit) |
| GD10,GD11 | Lower limit of input numerical value (32 bit) |
| GD12 | Numerical value, Ascii input |
| GD13 to GD99 | Not to be used |
| GD100 to GD1023 | For user's use |

| Device | Function |
|---|---|
| GB0 to GB12 | Not to be used |
| GB13 | Communication error |
| GB14,GB15 | Not to be used |
| GB16 | Buzzer (Issued once) *1 |
| GB17 | Buzzer (Issued three times) *1 |
| GB18 | Buzzer (Issued continuously) *1 |
| GB19 to 131 | Not to be used |
| GB132 to GB1023 | For user's use |

*1 Buzzer is available in the following OS.
F940WGOT Ver. 1.40 or later
F940GOT Ver. 6.40 or later
F930GOT Ver. 4.40 or later
F930GOT-K Ver. 4.60 or later (From first product)
F920GOT-K Ver. 1.00 or later (From first product)
Handy GOT Ver. 6.40 or later

### 3.3.2 PLC by Mitsubishi

#### 1) MELSEC-F FX Series

| Device name | | | | Setting range | | Device number representation |
|---|---|---|---|---|---|---|
| | | | | GT Designer | DU/WIN | |
| Bit device | Input relay (X) | | | X000~X377 | X000~X377 | Octal |
| | Output relay (Y) | | | Y000~Y377 | X000~X377 | |
| | Auxiliary relay (M) | | | M0000~M3071 | M0000~M3071 | Decimal |
| | Special auxiliary relay (M) | | | M8000~M8255 | M8000~M8255 | |
| | State (S) | | | S0~S999 | S0~S999 | |
| | Timer contact (T) | | | T0~T255 | T0~T255 | |
| | Counter contact (C) | | | C000~C255 | C0~C255 | |
| | GOT internal bit register (GB) *1 | | | GB132~GB1023 | GB132~GB1023 | |
| Word device | Timer (T) | | Present value | T0~T255 | T0~T255 | |
| | | | Set value *2 | TS0~TS255 | – | |
| | Counter (C) | 16 bits | Present value | C0~C199 | C0~C199 | |
| | | | Set value *2 | CS0~CS199 | | |
| | | 32 bits | Present value | C200~C255 | C200~C255 | |
| | | | Set value *2 | CS200~CS255 | | |
| | Data register (D) (Including file register*2) | | | D0~D7999 | D0~D7999 | |
| | File register (D) | | | D1000~D7999 | D1000~D7999 | |
| | Special data register (D) | | | D8000~D8255 | D8000~D8255 | |
| | Index register | | | – | Z | |
| | | | | – | V | |
| | GOT internal data register (GD) *1 | | | GD100~GD1023 | GD100~GD1023 | |

- In specifying word devices of a bar code reader, C200 to C255 are not available.

*1 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*2 Note the following when changing data:
1) Data cannot be changed if the PLC is equipped with an EPROM memory cassette.
2) Data cannot be changed if an entry code is registered in the PLC.
3) If the PLC is equipped with EEPROM memory cassette/memory board,
- data cannot be changed when the write-protect switch is turned ON.
- data can be changed when the write-protect switch is turned OFF and the PLC is in the STOP status.

### 2) MELSEC-A/Q (A mode) Series (including motion controller)

| Device name | | | Setting range | | Device number representation |
|---|---|---|---|---|---|
| | | | GT Designer | DU/WIN | |
| Bit device | Input (X) | | X0~X0FFF | X0~X0FFF | Hexadecimal |
| | Output (Y) | | Y0~Y0FFF | Y0~Y0FFF | |
| | Internal relay (M) *1 | | M0~M8191 | M0~M8191 | Decimal |
| | Latch relay (L) *1 | | L0~L8191 | L0~L8191 | |
| | Annunciator (F) | | F0~F2047 | F0~F2047 | |
| | Link relay (B) | | B0~B1FFF | B0~B1FFF | Hexadecimal |
| | Special internal relay (M) | | M9000~M9255 | M9000~M9255 | Decimal |
| | Timer (T) | Contact | TT0~TT2047 | T0~T2047 | |
| | | Coil | TC0~TC2047 | – | |
| | Counter (C) | Contact | CT0~CT1023 | C0~C1023 | |
| | | Coil | CC0~CC1023 | – | |
| | GOT internal bit register (GB) *2 | | GB132~1023 | GB132~1023 | |
| Word device | Data register (D) | | D0~D8191 | D0~D8191 | |
| | Special data register (D) | | D9000~D9255 | D9000~D9255 | |
| | Link register (W) | | W0~W1FFF | W0~W1FFF | Hexadecimal |
| | Timer (T) | Present value | TN0~TN2047 | T0~T2047 | Decimal |
| | | Set value | TS0~TS2047 | T0~T2047 | |
| | Counter (C) | Present value | CN0~CN1023 | C0~C1023 | |
| | | Set value | CS0~CS1023 | C0~C1023 | |
| | File register (R) | | R0~R8191 | R0~R8191 | |
| | Accumulator (A) | | A0~A1 | – | |
| | Index register (Z, V) *3 | | Z0~Z6(Z0=Z) | Z | |
| | | | V0~V6(V0=V) | V | |
| | GOT internal data register (GD) *2 | | GD100~1023 | GD100~1023 | |

*1 Latch relays (L) are treated as internal relays (M) in the GOT-F900.

*2 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*3 In computer link connection, index registers (Z, V) cannot be monitored or written.

### 3) MELSEC-QnA/Q (Q mode) Series

| Device name | | | Setting range | | Device number representation |
|---|---|---|---|---|---|
| | | | GT Designer | DU/WIN | |
| Bit device | Input (X) | | X0~X1FFF | X0~X1FFF | Hexadecimal |
| | Output (Y) | | Y0~Y1FFF | Y0~Y1FFF | |
| | Internal relay (M) | | M0~M32767 | M0~M32767 | Decimal |
| | Latch relay (L) | | L0~L32767 | L0~L32767 | |
| | Annunciator (F) | | F0~F32767 | F0~F32767 | |
| | Link relay (B) | | B0~B7FFF | B0~B7FFF | Hexadecimal |
| | Special link relay (SB) | | SB0~SB7FF | SB0~SB7FF | |
| | Timer (T) | Contact | TT0~TT32767 | T0~T32767 | Decimal |
| | | Coil | TC0~TC32767 | – | |
| | Counter (C) | Contact | CT0~CT32767 | C0~C32767 | |
| | | Coil | CC0~CC32767 | – | |
| | Special relay (SM) | | SM0~SM2047 | SM0~SM2047 | |
| | Retentive timer (ST) | Contact | SS0~SS32767 | SS0~SS32767 | |
| | | Coil | SC0~SC32767 | SC0~SC32767 | |
| | Step relay (S) | | S0~S32767 | S0~S32767 | |
| | GOT internal bit register (GB) *1 | | GB132~GB1023 | GB132~GB1023 | |
| Word device | Data register (D) | | D0~D32767 | D0~D32767 | |
| | Special register (SD) | | SD0~SD2047 | SD0~SD2047 | |
| | Link register (W) | | W0~W7FFF | W0~W7FFF | Hexadecimal |
| | Special link register (SW) | | SW0~SW7FF | SW0~SW7FF | |
| | Timer (T) | Present value | TN0~TN32767 | T0~T32767 | Decimal |
| | | Set value | – | – | |
| | Counter (C) | Present value | CN0~CN32367 | C0~C32367 | |
| | | Set value | – | – | |
| | Retentive timer (present value) (SN) | | SN0~SN32767 | SN0~SN32767 | |
| | File register (R) | | R0~R32767 *2 | R0~R32767 *2 | |
| | Index register (Z) | | Z0~Z15 | Z | |
| | GOT internal data register (GD) *1 | | GD100~GD1023 | GD100~GD1023 | |

*1 GB132 to GB255 and GD100 to GD127 in the F920GOT-K

*2 File registers in a block changed over by the RSET instruction are regarded as targets.

**Restriction in set monitor in computer link for A Series**

When a computer link unit for the A Series is attached to the QnA CPU and the GOT-F900 is connected to the unit, the set monitor range is equivalent to that in the AnA CPU, and the restriction shown in the table below is applied (by the restriction in computer link).

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Word device | Timer (Present value) | – | 0 to 255 | Decimal |
| | Timer (Set value) | – | – | |
| | Counter (Present value) | – | 0 to 255 | |
| | Counter (Set value) | – | – | |
| | File register | – | – | |

–: Monitor and write disabled

**Specification of PLC number when using Q multiple PLC system**

Specify the PLC number when appointing the device.
0: CPU connected (Control PLC if connected to the link)
1 to 4: CPU with the specified number

### 4) FX Series GM positioning unit (GM direct connection)

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Input (X) *1 | X0~X377 | X0~X377 | Octal |
| | Output (Y) | Y0~Y67 | Y0~Y67 | |
| | Internal relay (M) | M0~M511 | M0~M511 | Decimal |
| | Special auxiliary relay (SM) | M9000~M9175 | M9000~M9175 | |
| | GOT internal bit register (GB) | GB132~1023 | GB132~1023 | |
| Word device | Data register (D) | D0~D8191 | D0~D8191 | |
| | Special data register (SD) | D9000~D3999 | D9000~D3999 | |
| | File register (R) | D4000~D6999 | D4000~D6999 | |
| | Index register (Z, V) | Z0~Z6 (32 bits) | Z (32 bits) | |
| | | V0~V6 (16 bits) | V (16 bits) | |
| | GOT internal data register (GD) | GD100~1023 | GD100~1023 | |

*1 Devices cannot be written.

### 5) FREQROL Series inverter (INV direct connection)

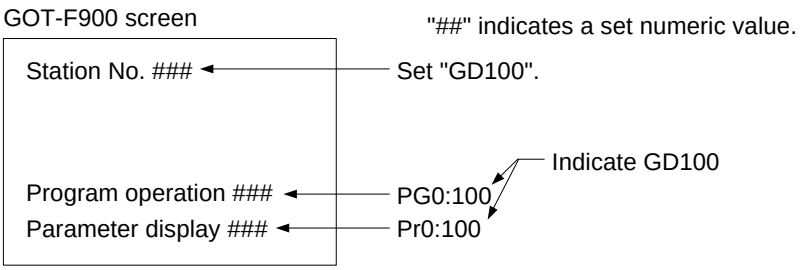
| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Control status (S) | S0:□~S7:□ | | Decimal |
| | GOT internal bit register (GB) | GB132~1023 | | |
| Word device | Alarm code (A) | A0:□~A7:□ | | |
| | Parameter (Pr) | Pr0:□~Pr993:□ | | |
| | Program operation (PG) | PG0:□~PG89:□ | | |
| | Special parameter (SP) | SP108:□~SP127:□ | | |
| | GOT internal data register (GD) | GD100~1023 | | |

"□" indicates the station number of the monitored inverter.

Specify the station number using either of the following methods.

Station No. specification (direct) : Specify the station number of the inverter when setting the device.
[Available setting range: 0 to 31]

Station No. specification (indirect): Specify the station number of the inverter indirectly using 16-bit GOT internal registers (GD100 to GD115) when setting the device.
Multiple inverters can be changed on one screen.
[Available setting range: 100 to 115]
* The station No. corresponds to each device of GD100 to GD115.


GOT-F900 screen
"##" indicates a set numeric value.
Station No. ###
Set "GD100".
Indicate GD100
Program operation ###
PG0:100
Parameter display ###
Pr0:100

### 3.3.3 PLC Units Manufactured by Other Companies

#### 1) Microcomputer board (general-purpose communication)

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Bit data (M) | M0~M2047 *1 | M0~M2047 | Decimal |
| | Special memory (M) *2 | M8000~M8063 | M8000~M8063 | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Word data (D) | D0~D4095 | D0~D4095 | |
| | Special memory (M) *2 | D8000~D8015 | D8000~D8015 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

*1 The bit data (M) is available in the GT Designer version SW1-E and later.

*2 The special memory is offered for special application (such as interrupt output and communication error information) in the GOT.

#### 2) SYSMAC C Series manufactured by Omron

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | I/O relay | ..000000~..614315 | 00000~51115 | Decimal |
| | Internal auxiliary relay | WR00000~WR51115 | – | |
| | Data link relay (LR) | LR00000~LR19915 | L0000~L6315 | |
| | Auxiliary memory relay (AR) | AR00000~AR95915 *1 | A0000~A2715 | |
| | Holding relay (HR) | HR00000~HR51115 | H0000~H9915 | |
| | Timer contact (TIM) | TIM0~TIM2047 | T000~T511 | |
| | Counter contact (CNT) | CNT0~CNT2047 | C000~C511 | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Data memory (DM) | DM0~DM9999 | D0000~D9999 | |
| | Timer (Present value) (TIM) | TIM0~TIM2047 | T000~T511 | |
| | Counter (Present value) (CNT) | CNT0~CNT2047 | C000~C511 | |
| | Extension data memory (EM) (current bank) | EM0000~EM9999 | – | |
| | Extension data memory (E*) (bank specification) (*: 0 to C) | E*0000~E*9999 (*:0~C) | – | Hexadecimal |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | Decimal |

*1 When the CS1 Series is connected, auxiliary memory relays (AR) cannot be set to ON or OFF. Do not use them in the key operation setting (bit).

### 3) FLEX-PC N Series manufactured by Fuji Electric

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Input (X) | – | X0~X7FF | Hexadecimal |
| | Output (Y) | – | Y0~Y7FF | |
| | Internal relay (M) | – | M0~M1FFF | |
| | Latch relay (L) | – | L0~L1FFF | |
| | State (S) | – | S0~S7FF | |
| | Special internal relay (M) | – | M800~M81FF | |
| | GOT internal bit register (GB) | – | GB132~GB1023 | |
| Word device | Timer (T) | – | T0~T3FF | |
| | Counter (C) | – | C0~C1FF | |
| | Data register (D) | – | D0~D2FFF | |
| | Special data register (D) | – | D8000~D81FF | |
| | Link register (W) | – | W0~W3FFF | |
| | File register (R) | – | R0~R7FFF | |
| | GOT internal data register (GD) | – | GD100~GD1023 | |

### 4) Machine controller CP9200SH Series manufactured by Yasukawa Electric

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Input relay (IB) | IB0~IBFFFF | – | Hexadecimal |
| | Coil (MB) | MB0~MB4095F | – | *1 |
| | GOT internal bit register (GB) | GB132~GB1023 | – | Decimal |
| Word device | Input register (IW) | IW0~IW7FFF | – | Hexadecimal |
| | Holding register (MW) | MW0~MW32767 | – | Hexadecimal |
| | GOT internal data register (GD) | GD100~GD1023 | – | Decimal |

*1 Word address (decimal) + Bit position (hexadecimal)

### 5) FP Series manufactured by Matsushita Electric Works

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Input relay (X) *3 | X0000~X511F | X0000~X511F | Decimal *6 |
| | Output relay (Y) | Y0000~Y511F | Y0000~Y511F | |
| | Internal relay (R) *4 | R0000~R910F | R0000~R910F | |
| | Link relay (L) *1 | L0000~L639F | L0000~L639F | |
| | Error alarm relay (E) *2*3 | E0~E2047 | E0~E2047 | Decimal |
| | Timer contact (T) *3 | T0~T3071 | T0~T3071 | |
| | Counter contact (C) *3 | C0~C3071 | C0~C3071 | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Elapsed value of timer/counter (EV) | EV0~EV3071 | EV0~EV3071 | |
| | Set value of timer/counter (SV) | SV0~SV3071 | SV0~SV3071 | |
| | Data register (DT) *4 | DT0~DT16383 | DT0~DT16383 | |
| | Link register (LD) *1 | LD0~LD8447 | LD0~LD8447 | |
| | File register (FL) *1*5 | FL0~FL32764 | FL0~FL32764 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

Pulse relays (P) and index registers (IX, IY and I) are not available.

*1 FP0 is excluded.

*2 Only FP2SH is available.

*3 Write is disabled.

*4 Special relays (R9000 to R910F) and special data registers (DT9000 to DT9255) are included also. However, access is disabled in special data registers from D90000 in the FP Series.

*5 Access is enabled only in the bank 0.

*6 Bit device number (3-digit decimal number) + Bit position (1-digit hexadecimal number)

### 6) SLC500/MicroLogix Series manufactured by Allen-Bradley

a) SLC500 Series

i) GT Designer (earlier than Version 5.05F) and DU/WIN (earlier than Version 2.50)

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Bit (B) | B0030000~B003255F<br>B0100000~B255255F | B0030000~B003255F<br>B0100000~B255255F | Hexadecimal |
| | Timer (T)<br>(timing bit) | TT0040000~TT0042550<br>TT0100000~TT2552550 | – | Decimal |
| | Timer (T)<br>(completion bit) | TN0040000~TN0042550<br>TN0100000~TN2552550 | T0040000~T0042550<br>T0100000~T2552550 | |
| | Counter (C)<br>(up counter) | CU0050000~CU0052550<br>CU0100000~CU2552550 | – | |
| | Counter (C)<br>(down counter) | CD0050000~CD0052550<br>CD0100000~CD2552550 | – | |
| | Counter (C)<br>(completion bit) | CN0050000~CN0052550<br>CN0100000~CN2552550 | C0050000~C0052550<br>C0100000~C2552550 | |
| | GOT internal bit register (GB) | GB132~GB1023 | – | |
| Word device | Timer (T) *1<br>(set value) | TP004000~TP004255<br>TP010000~TP255255 | T004000~T004255<br>T010000~T255255 | Decimal |
| | Timer (T) *1<br>(current value) | TA004000~TA004255<br>TA010000~TA255255 | | |
| | Counter (T)<br>(set value) | CP005000~CP005255<br>CP010000~CP255255 | C004000~C005255<br>C010000~C255255 | |
| | Counter (T)<br>(current value) | CA005000~CA005255<br>CA010000~CA255255 | | |
| | Integer (N) | NO07000~N007255<br>NO10000~N255255 | NO07000~N007255<br>NO10000~N255255 | |
| | GOT internal data register (GD) | GD100~GD1023 | – | |

*1 32-bit cannot be chosen when setting the screen creation software.

ii) GT Designer (Version 5.05F or later) and DU/WIN (Version 2.50 or later)

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Bit (B) | B3:0/0~B3:255/15<br>B10:0/0~B255:255/15 | B3:0/0~B3:255/15<br>B10:0/0~B255:255/15 | Hexadecimal |
| | Timer (T)<br>(timing bit) | T4:0/TT~T4:255/TT<br>T10:0/TT~T255:255/TT | T4:0/TT~T4:255/TT<br>T10:0/TT~T255:255/TT | Decimal |
| | Timer (T)<br>(completion bit) | T4:0/DN~T4:255/DN<br>T10:0/DN~T255:255/DN | T4:0/DN~T4:255/DN<br>T10:0/DN~T255:255/DN | |
| | Counter (C)<br>(up counter) | C5:0/CU~C5:255/CU<br>C10:0/CU~C255:255/CU | C5:0/CU~C5:255/CU<br>C10:0/CU~C255:255/CU | |
| | Counter (C)<br>(down counter) | C5:0/CD~C5:255/CD<br>C10:0/CD~C255:255/CD | C5:0/CD~C5:255/CD<br>C10:0/CD~C255:255/CD | |
| | Counter (C)<br>(completion bit) | C5:0/DN~C5:255/DN<br>C10:0/DN~C255:255/DN | C5:0/DN~C5:255/DN<br>C10:0/DN~C255:255/DN | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Timer (T) *1<br>(set value) | T4:0.PRE~T4:255.PRE<br>T10:0.PRE~T255:255.PRE | T4:0.PRE~T4:255.PRE<br>T10:0.PRE~T255:255.PRE | Decimal |
| | Timer (T) *1<br>(current value) | T4:0.ACC~T4:255.ACC<br>T10:0.ACC~T255:255.ACC | T4:0.ACC~T4:255.ACC<br>T10:0.ACC~T255:255.ACC | |
| | Counter (T) *1<br>(set value) | C5:0.PRE~C5:255.PRE<br>C10:0.PRE~C255:255.PRE | C5:0.PRE~C5:255.PRE<br>C10:0.PRE~C255:255.PRE | |
| | Counter (T) *1<br>(current value) | C5:0.ACC~C5:255.ACC<br>C10:0.ACC~C255:255.ACC | C5:0.ACC~C5:255.ACC<br>C10:0.ACC~C255:255.ACC | |
| | Integer (N) | N7:0~N7:255<br>N10:0~N255:255 | N7:0~N7:255<br>N10:0~N255:255 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

*1 32-bit cannot be chosen when setting the screen creation software.

**File number and element specification range**

Specify the file number and an element in decimal numbers. However, specify the bit position of a bit (B) in a hexadecimal number.

| Device name (symbol) | | | File number*1 | | Available element specification range |
|---|---|---|---|---|---|
| Bit device | Bit | (B) | 3 | 10~255 | 0~255 *2 |
| | Timer (time counting bit) | (TT) | 4 | 10~255 | 0~255 |
| | Timer (completion bit) | (TN) | 4 | 10~255 | 0~255 |
| | Counter (effective up-count bit) | (CU) | 5 | 10~255 | 0~255 |
| | Counter (effective down-count bit) | (CD) | 5 | 10~255 | 0~255 |
| | Counter (completion bit) | (CN) | 5 | 10~255 | 0~255 |
| Word device | Timer (set value) | (TP) | 4 | 10~255 | 0~255 |
| | Timer (present value) | (TA) | 4 | 10~255 | 0~255 |
| | Counter (set value) | (CP) | 5 | 10~255 | 0~255 |
| | Counter (present value) | (CA) | 5 | 10~255 | 0~255 |
| | Integer (N) | (N) | 7 | 10~255 | 0~255 |

*1 File numbers 10 to 255 are available in the user setting.

*2 For each element, the bit position can be specified in the range from 0 to F (15).

b) MicroLogix 1000/1200/1500 Series

i) GT Designer (Version 5.05F or later) and DU/WIN (Version 2.50 or later)

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Bit (B) | B3:0/0~B255:255/15 | B3:0/0~B255:255/15 | Hexadecimal |
| | Timer (T) (timing bit) | T3:0/TT~T255:255/TT | T3:0/TT~T255:255/TT | Decimal |
| | Timer (T) (completion bit) | T3:0/DN~T255:255/DN | T3:0/DN~T255:255/DN | |
| | Counter (C) (up counter) | C3:0/CU~C255:255/CU | C3:0/CU~C255:255/CU | |
| | Counter (C) (down counter) | C3:0/CD~C255:255/CD | C3:0/CD~C255:255/CD | |
| | Counter (C) (completion bit) | C3:0/DN~C255:255/DN | C3:0/DN~C255:255/DN | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Timer (T) *1 (set value) | T3:0.PRE~T255:255.PRE | T3:0.PRE~T255:255.PRE | Decimal |
| | Timer (T) *1 (current value) | T3:0.ACC~T255:255.ACC | T3:0.ACC~T255:255.ACC | |
| | Counter (T) *1 (set value) | C3:0.PRE~C255:255.PRE | C3:0.PRE~C255:255.PRE | |
| | Counter (T) *1 (current value) | C3:0.ACC~C255:255.ACC | C3:0.ACC~C255:255.ACC | |
| | Integer (N) | N3:0~N255:255 | N3:0~N255:255 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

*1 32-bit cannot be chosen when setting the screen creation software.

**File number and element specification range**

Specify the file number and an element in decimal numbers. However, specify the bit position of a bit (B) in a hexadecimal number.

| Device name (symbol) | | | File number*1 | Available element specification range |
|---|---|---|---|---|
| Bit device | Bit | (B) | 3~255 | 0~255 *2 |
| | Timer (timing bit) | (T) | 3~255 | 0~255 |
| | Timer (completion bit) | (T) | 3~255 | 0~255 |
| | Counter (up counter) | (C) | 3~255 | 0~255 |
| | Counter (down counter) | (C) | 3~255 | 0~255 |
| | Counter (completion bit) | (C) | 3~255 | 0~255 |
| Word device | Timer (set value) | (T) | 3~255 | 0~255 |
| | Timer (current value) | (T) | 3~255 | 0~255 |
| | Counter (set value) | (C) | 3~255 | 0~255 |
| | Counter (current value) | (C) | 3~255 | 0~255 |
| | Integer (N) | (N) | 3~255 | 0~255 |

*1 File numbers 3 to 255 are available in the user setting.

*2 For each element, the bit position can be specified in the range from 0 to 15.

### 7) S7-200/300 Series manufactured by Siemens

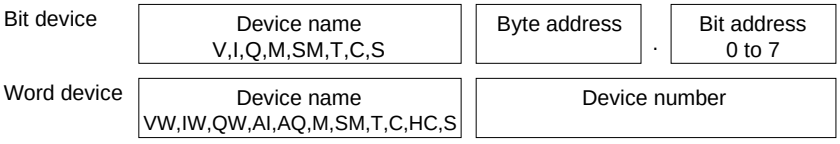
a) S7-200 Series

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | FX-PCS-DU/WIN | |
| Bit device | Variable Memory (V) | V00~V51197 | V0.0~V5119.7 | Decimal |
| | Input (I) | I00~I77 | I0.0~I7.7 | |
| | Output (Q) | Q00~Q77 | Q0.0~Q7.7 | |
| | Bit memory (M) | M00~M317 | M0.0~M31.7 | |
| | Special Memory (SM) | SM00~SM1947 | SM0.0~SM194.7 | |
| | Timer (T) *1 | T0~T255 | T0~T255 | |
| | Counter (C) *1 | C0~C255 | C0~C255 | |
| | Sequence Control Relay (S) | S00~S317 | S0.0~S31.7 | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Variable Memory (V) *6 | VW0~VW5118 | VW0~VW5118 | |
| | Input (I) *6 | IW0~IW6 | IW0~IW6 | |
| | Output (Q) *6 | QW0~QW6 | QW0~QW6 | |
| | Analog Input (AI) *2*6 | AIW0~AIW30 | AIW0~AIW30 | |
| | Analog Output (AQ) *6 | AQW0~AQW30 | AQW0~AQW30 | |
| | Bit memory (M) *6 | MW0~MW30 | MW0~MW30 | |
| | Special Memory (SM) *3*6 | SMW0~SMW192 | SMW0~SMW192 | |
| | Timer (T) (16bit) *4 | T0~T255 | T0~T255 | |
| | Counter (C) (16bit) *4 | C0~C255 | C0~C255 | |
| | High Speed Counter (HC) (32bit) *5 | HC0~HC2 | HC0~HC2 | |
| | Sequence Control Relay (S) *6 | SW0~SW30 | SW0~SW30 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

*1 Bit devices T and C cannot be written.
*2 Word devices HC and AI cannot be written.
*3 Word device SM cannot be monitored.
*4 Word devices T and C are the 16-bit type.
*5 Word device HC is the 32-bit type.
*6 Only even byte addresses are available.

**Note on number representation**

A decimal point exists when using the GT Designer but not when using the DU/WIN.



b) S7-300 Series

| Device name | | Setting range | | Device number representation |
|---|---|---|---|---|
| | | GT Designer | DU/WIN | |
| Bit device | Input relay (I) | I0~I5117 | I0.0~I511.7 | Decimal |
| | Output relay (Q) | Q0~Q5117 | Q0.0~Q511.7 | |
| | Bit memory (M) | M0~M20477 | M0.0~M2047.7 | |
| | GOT internal bit register (GB) | GB132~GB1023 | GB132~GB1023 | |
| Word device | Present value of timer (T) | T0~T511 | T0~T511 | |
| | Present value of counter (C) | C0~C511 | C0~C511 | |
| | Data register (D) | D000100000~D102365534 | DB□.DBW0~DB□.DBW65534 | |
| | GOT internal data register (GD) | GD100~GD1023 | GD100~GD1023 | |

"□" indicates a number in the range from 1 to 1023.
Only even values are available as byte addresses of data register (DBW values).

**Note on number representation**

A decimal point exists when using the GT Designer but not when using the DU/WIN.

| | | | | |
|---|---|---|---|---|
| Bit device | Device name<br>I,Q,M | Byte address<br>0 to 511,2047 | . | Bit address<br>0 to 7 |
| Word device | Device name<br>T,C | Device number<br>000 to 511 | | |
| | Device name<br>DB | Block number<br>1 to 1023 | . | Byte address<br>DBW0 to DBW65534 |

## 3.4 Hardware Specifications

This section explains the hardware specifications of the GOT-F900 Series.

**1) General specifications** **"□" of the GOT model name indicates 0 or 3.**

<table>
<tr><th colspan="2">Item</th><th>F940WGOT</th><th colspan="2">F940GOT</th><th>F930GOT-K</th><th>F930GOT</th></tr>
<tr><th colspan="2">Product model name</th><th>F940WGOT<br>-TWD-E</th><th>F940GOT<br>-SWD-E</th><th>F940GOT<br>-LWD-E</th><th>F930GOT<br>-BBD-K-E</th><th>F930GOT<br>-BWD-E</th></tr>
<tr><td colspan="2">Supply voltage</td><td colspan="5">24V DC+10%-15% (service power supply of PLC or separately prepared DC power supply)</td></tr>
<tr><td colspan="2">24V DC current consumption<br>(backlight OFF)</td><td>650mA/24V DC*1<br>400mA/24V DC</td><td>410mA<br>/24V DC</td><td>390mA<br>/24V DC</td><td>220mA/24V DC<br>120mA/24V DC</td><td>200mA/24V DC</td></tr>
<tr><td colspan="2">Fuse</td><td colspan="5">Built-in (irreplaceable)</td></tr>
<tr><td colspan="2">Allowable momentary power failure time</td><td colspan="5">Operation continues against power failure of 5ms or less.</td></tr>
<tr><td colspan="2">Built-in lithium battery</td><td>PM-20BL<br>(life: Approx. 5 years)</td><td colspan="2">PM-20BL<br>(life: Approx. 5 years)</td><td>FX2NC-32BL<br>(life: Approx. 3 years)</td><td>FX2NC-32BL<br>(life: Approx. 3 years)</td></tr>
<tr><td colspan="2">Ambient temperature</td><td>0~50°C*2</td><td colspan="2">0~50°C*3</td><td>0~50°C</td><td>0~50°C</td></tr>
<tr><td colspan="2">Ambient humidity</td><td colspan="5">35 to 85%RH (no condensation)</td></tr>
<tr><td colspan="2">Working atmosphere</td><td colspan="5">Free from corrosive gas and much dusts</td></tr>
<tr><td colspan="2">Vibration resistance</td><td colspan="5"><table><tr><td rowspan="5">In conformance to JIS B3502 and IEC 61131-2</td><td></td><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td rowspan="5">10 times in each of X, Y and Z directions (for 80 min)</td></tr><tr><td rowspan="2">With intermittent vibration</td><td>10~57Hz</td><td>–</td><td>0.075mm</td></tr><tr><td>57~150Hz</td><td>9.8m/s2</td><td>–</td></tr><tr><td rowspan="2">With continuous vibration</td><td>10~57Hz</td><td>–</td><td>0.035mm</td></tr><tr><td>57~150Hz</td><td>4.9m/s2</td><td>–</td></tr></table></td></tr>
<tr><td colspan="2">Impact resistance</td><td colspan="5">In conformance to JIS B3502 and IEC 61131-2 (147 m/s2, 3 times in each of X, Y and Z directions)</td></tr>
<tr><td colspan="2">Noise resistance</td><td colspan="5">By noise simulator of 1,000 Vp-p in noise voltage, 1 μs in noise width and 30 to 100 Hz in frequency</td></tr>
<tr><td colspan="2">Withstand voltage</td><td colspan="5">500V AC for 1 min (between all power terminals and ground terminal)</td></tr>
<tr><td colspan="2">Insulation resistance</td><td colspan="5">5 MΩ or more by 500V DC megger (between all power terminals and ground terminal)</td></tr>
<tr><td colspan="2">Grounding</td><td colspan="5">Class D grounding (If grounding is impossible, it can be omitted.)</td></tr>
<tr><td colspan="2">Protective structure</td><td>Equivalent to IP65f*6*7</td><td colspan="2">Equivalent to IP65f*6*7</td><td>Equivalent to IP65f*6*7</td><td>Equivalent to IP65f*6*7</td></tr>
<tr><td rowspan="3">Life</td><td>Display element</td><td colspan="5">Approx. 50,000 hours or more (working temperature: 25°C)<br>Guarantee period is 1 year.</td></tr>
<tr><td rowspan="2">Backlight*4</td><td>50,000 hours or more</td><td colspan="2">40,000 hours or more</td><td>50,000 hours or more</td><td>50,000 hours or more</td></tr>
<tr><td colspan="5">Cold cathode fluorescent tube backlight (working temperature: 25°C)<br>Guarantee period is 1 year.</td></tr>
</table>

| Item | | F920GOT-K | Handy GOT | |
|---|---|---|---|---|
| Product model name | | F920GOT-BBD5-K-E | F94□GOT-SBD-(R)H-E | F94□GOT-LBD-(R)H-E |
| Supply voltage | | 5V DC<br>Supplied from PLC | 24V DC+10%-15% (service power supply of PLC or separately prepared DC power supply) | |
| 24V DC current consumption<br>(backlight OFF) | | 220mA/5V DC<br>180mA/5V DC | 300mA/24V DC<br>200mA/24V DC | |
| Fuse | | Built-in (irreplaceable) | | |
| Allowable momentary power failure time | | – | Operation continues against power failure of 5ms or less. | |
| Built-in lithium battery | | – | FX2NC-32BL<br>(life: Approx. 3 years) | |
| Ambient temperature | | 0~50°C | 0~40°C | |
| Ambient humidity | | 35 to 85%RH (no condensation) | | |
| Working atmosphere | | Free from corrosive gas and much dusts | | |
| Vibration resistance | | In conformance to JIS B3502 and IEC 61131-2: With intermittent vibration: 10~57Hz, Amplitude 0.075mm; 57~150Hz, Acceleration 9.8m/s$^2$; With continuous vibration: 10~57Hz, Acceleration 4.9m/s$^2$; 57~150Hz, Amplitude 0.035mm; 10 times in each of X, Y and Z directions (for 80 min) | | |
| Impact resistance | | In conformance to JIS B3502 and IEC 61131-2 (147 m/s$^2$, 3 times in each of X, Y and Z directions) | | |
| Noise resistance | | By noise simulator of 1,000 Vp-p in noise voltage, 1 μs in noise width and 30 to 100 Hz in frequency | | |
| Withstand voltage | | 500V AC for 1 min *5 | 500V AC for 1 min<br>(between all power terminals and ground terminal) | |
| Insulation resistance | | 5 MΩ or more by 500V DC megger *5 | 5 MΩ or more by 500V DC megger<br>(between all power terminals and ground terminal) | |
| Grounding | | Class D grounding (If grounding is impossible, it can be omitted.) | | |
| Protective structure | | Equivalent to IP65f *6*7 | Equivalent to IP54 *6 | |
| Life | Display element | Approx. 50,000 hours or more (working temperature: 25°C) Guarantee period is 1 year. | | |
| | Backlight*4 | – | 40,000 hours or more | |
| | | Cold cathode tube (working temperature: 25°C) Guarantee period is 1 year. | | |

*1 When the power is turned on, the current consumption of 750 mA/24V DC maximum is applied.

*2 0 to 50°C when the screen is installed laterally. 0 to 40°C when the screen is installed longitudinally or horizontally.

*3 0 to 40°C when the extension interface is used.

*4 The life of the backlight above indicates the value at 25°C.

*5 Between all power terminals of the PLC and ground terminal.

*6 The relevancy is confirmed in the test for IP65f or IP54. However, this test result does not provide any guarantees that the product stands against use in all sorts of environment.

*7 As regarding the front panel

**2) Switch/lamp/buzzer specifications** **"□" of the GOT model name indicates 0 or 3.**

| Item | | F940WGOT | F940GOT | F930GOT-K | F930GOT | F920GOT-K |
|---|---|---|---|---|---|---|
| Product model name | | F940WGOT -SWD-E | F940GOT-SWD-E F940GOT-LWD-E | F930GOT -BBD-K-E | F930GOT -BWD-E | F920GOT -BBD5-K-E |
| Switch/key | Operation switch | – | – | – | – | – |
| | Function key | – | – | 8 switches | – | 6 switches |
| | Grip switch | – | – | – | – | – |
| | Emergency stop switch | – | – | – | – | – |
| | Keylock switch | – | – | – | – | – |
| | Ten-key keypad | – | – | 0~9, (-), (.) | – | 0~9, (-), (.) |
| | Cursor key | – | – | ENT,ESC, SET,DEV, ▼,◀,▶,▲ | – | ENT,ESC, SET,DEV, ▼,◀,▶,▲ |
| Lamp | Power indicator LED | – | 1 LED (green) | – | – | – |
| | Operation indicator LED | – | – | – | – | – |
| | Function key LED | – | – | 8 switches (green) | – | – |
| | Grip switch indicator LED | – | – | – | – | – |
| Buzzer*1 | Buzzer | – | – | – | – | – |
| | Built-in buzzer | Provided | Provided | Provided | Provided | Provided |

| Item | | Handy GOT | | | |
|---|---|---|---|---|---|
| Product model name | | F94□GOT-SBD-H-E F94□GOT-LBD-H-E | | F94□GOT-SBD-RH-E F94□GOT-LBD-RH-E | |
| Switch/key | Operation switch | 4 switches (4 contacts/ common) | a contact 10 mV/24V DC Life: 1,000,000 times | 4 switches (4 contacts/ common) | a contact 10 mV/24V DC Life: 1,000,000 times |
| | Function key | – | | – | |
| | Grip switch | 1 switch (assigned as key in display unit) | | 1 switch (JSHD4H2 manufactured in Sweden) 3-positioned OFF/ON/OFF (individual wiring) | 2a contact 1A/24V DC (resistance load) |
| | Emergency stop switch | 1 switch (AH165-VR01 manufactured by Fuji Electric) (individual wiring) | b contact 1A/24V DC (resistance load) Life: 100,000 times or more | 1 switch (AH165-VR02 manufactured by Fuji Electric) (individual wiring) | 2b contact 1A/24V DC (resistance load) Life: 100,000 times or more |
| | Keylock switch | – | – | 1 switch (with 2 keys) (AS6M-2KT1PB manufactured by IDEC Corporation) (individual wiring) | c contact 1A/24V DC (resistance load) Life: 100,000 times or more |
| | Ten-key keypad | – | | – | |
| | Cursor key | – | | – | |
| Lamp | Power indicator LED | 1 LED (green) | | 1 LED (green) | |
| | Operation indicator LED | 4 LED (green) | | 4 LED (green) | |
| | Function key LED | – | | – | |
| | Grip switch indicator LED | 1 LED (green) | | 1 LED (green) | |

| Item | | Handy GOT | |
|---|---|---|---|
| Product model name | | F94□GOT-SBD-H-E<br>F94□GOT-LBD-H-E | F94□GOT-SBD-RH-E<br>F94□GOT-LBD-RH-E |
| Buzzer*1 | Buzzer | – | – |
| | Built-in buzzer | Provided | Provided |

*1 The buzzer sounds as its power input from the outside of the GOT. When a touch key on the screen is pressed, the built-in buzzer sounds. (The in-built buzzer of F920GOT-K sounds only when the key-pad is operated.)

### 3) External interface specifications

**"□" of the GOT model name indicates 0 or 3.**

| Item | | F940WGOT | F940GOT | F930GOT(-K) |
|---|---|---|---|---|
| Product model name | | F940WGOT-SWD-E | F940GOT-SWD-E<br>F940GOT-LWD-E | F930GOT-BWD-E<br>F930GOT-BBD-K-E |
| Serial interface | RS-232C | 9-pin D-Sub, male port, 2 channels<br>#4-40UNC<br>Inch screw thread | 9-pin D-Sub, male port<br>#4-40UNC<br>Inch screw thread | 9-pin D-Sub, male port<br>#4-40UNC<br>Inch screw thread |
| | RS-422 | 9-pin D-Sub, female port<br>M2.6<br>Metric screw thread | 9-pin D-Sub, female port<br>M2.6<br>Metric screw thread | 9-pin D-Sub, female port<br>M2.6<br>Metric screw thread |
| External I/O connection | For operation switch | – | – | – |
| | For emergency stop switch | – | – | – |

| Item | | F920GOT-K | Handy GOT | | | |
|---|---|---|---|---|---|---|
| Product model name | | F920GOT-BBD5-K-E | F94□GOT-SBD-H-E<br>F94□GOT-LBD-H-E | | F94□GOT-SBD-RH-E<br>F94□GOT-LBD-RH-E | |
| Serial interface | RS-232C | 9-pin D-Sub, male port<br>#4-40UNC<br>Inch screw thread | 9-pin D-Sub, male connector<br>Screen data transfer<br>Dedicated to personal computer port | | 9-pin D-Sub, male connector<br>Screen data transfer<br>Dedicated to personal computer port | |
| | RS-422 | 9-pin D-Sub, female port<br>M2.6<br>Metric screw thread | Dedicated port<br>F940GOT-*BD-H:RS-422<br>F943GOT-*BD-H:RS-232C | | Dedicated port<br>F940GOT-*BD-RH:RS-422<br>F943GOT-*BD-RH:RS-232C | |
| External I/O connection | For operation switch | – | 4 switches (4 contacts/ common) | External cable (with 25-pin D-Sub connector or untied) | 4 switches (4 contacts/ common) | External cable (with 37-pin D-Sub connector) |
| | For emergency stop switch | – | 1 switch (a contact) | | 1 switch (a contact) | |

# MEMO

# 4. Installation and Wiring of F920GOT-K/F930GOT(-K)/F940(W)GOT

## Cautions on installation

- Use the F920GOT-K/F930GOT(-K)/F940(W)GOT in the environment for the general specifications described in this manual.
  Never use the F920GOT-K/F930GOT(-K)/F940(W)GOT in a place with dusts, soot, conductive dusts, corrosive gas or flammable gas, place exposed to high temperature, condensation or wind and rain, or place subject to vibrations and impacts.
  If the F920GOT-K/F930GOT(-K)//F940(W)GOT is used in an unfavorable place described above, electrical shock, fire or malfunction, damages or deterioration of the F930GOT/F940(W)GOT may be caused.
- Never drop cutting chips and electric wire chips into the ventilation window of the F920GOT-K/F930GOT(-K)/F940(W)GOT when you drill screw holes or perform the wiring work.
  Otherwise, fire, failure or malfunction may be caused.
- Connect connection cables securely to the specified connectors while the power is turned OFF.
  Imperfect connection may cause malfunction or failure.

## Caution on wiring

- Make sure to shut down all phases of the power supply outside the F920GOT-K/F930GOT(-K)/F940(W)GOT before starting the installation or wiring work.
  Otherwise, electrical shock and damages of the F930GOT/F940(W)GOT may be caused.

## Caution

- The F920GOT-K/F930GOT(-K)/F940(W)GOT has the DC power specifications. Connect the DC power cable to dedicated terminals as described in this manual.
  If the AC power supply is connected to power terminals, the F930GOT/F940(W)GOT may be burnt.
- Mount and connect a fuse of 2 A to the 24V DC power supply. Connect the + and - sides of the DC power supply correctly as described in this manual.
  If the power supply is connected reversely, failure may be caused.
- Perform Class D grounding to the ground terminal ( ⏚ ) of the F930GOT/F930GOT-K/F940(W)GOT using a wire of 1.25 $mm^2$ or more.
  When supplying the power from the PLC (excluding the F940WGOT), connect the F930GOT/F930GOT-K/F940(W)GOT to the ground terminal of the PLC. When supplying the power from the outside, connect the F930GOT/F940(W)GOT to the ground terminal of the external power supply.
  However, never perform common grounding with the strong electrical system.

## Caution on design

- While executing monitoring in the GOT (GOT-F900), if a communication error (including disconnection of a cable) occurs, communication between the GOT and the PLC CPU is interrupted and the GOT is disabled.
  When establishing the system configuration using the GOT, make sure that a switch which gives a significant operation to the system is executed from any equipment other than the GOT while postulating communication error in the GOT. Otherwise, accidents may be caused by incorrect output and malfunction.

## Caution

- Do not bind the control cable and the communication cable together with the main circuit and the power line. Keep such cables off the main circuit and the power line by 100 mm or more.
  Otherwise, malfunction may be caused by noise.
- Make sure to press touch keys on the display screen with hand. If touch keys are subject to an excessive force or pressed by a hard or sharp object, they may fail.

**Note**

- Even if momentary power failure of less than 5 ms occurs in the power supply, the F930GOT/F930GOT-K/F940(W)GOT continues the operation.
  If long-time power failure or voltage drop occurs, the F930GOT/F940(W)GOT stops the operation. When the power supply is recovered, the F930GOT/F940(W)GOT restarts the operation.
- Use electric wires of 0.75 $mm^2$ or more in wiring of the power supply so that voltage drop does not occur. Use solderless terminals for M3, and tighten them securely with the tightening torque of 0.5 to 0.8 N•m so that troubles are not caused.

This section explains installation on the panel face and wiring of the power supply, etc.

**Wiring procedure**

This section introduces the procedure to connect the GOT-F900 to connected equipment such as PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| Outline of Connection | You can learn the outline of the connection method. | 4.1 |
| Name of each Part | You can learn the name of each part of the F930GOT/F940(W)GOT. | 4.2 |
| Processing of Panel Face | You can learn the dimension of the processing on the panel face. | 4.3 |
| Installation | You can learn the method to install the F920GOT-K/F930GOT/F930GOT-K/F940(W)GOT. | 4.4 |
| Connector Pin Layout and Signal Name | You can check the connector signal names. | 4.5 |

*2.* Wiring

| Item name | Description | Reference |
|---|---|---|
| Outline of Internal Wiring | You can check block diagrams of portions requiring wiring and the internal wiring. | 4.6 |
| Wiring for 24V DC and 5V DC Power Supply and Class D Grounding | You can check the methods to wire the 24 VDC power supply and perform Class D grounding. | 4.7 |
| Handling of function keys | You can learn how to use the function keys.<br>(Setting in the screen creation software is required.) | 4.8 |

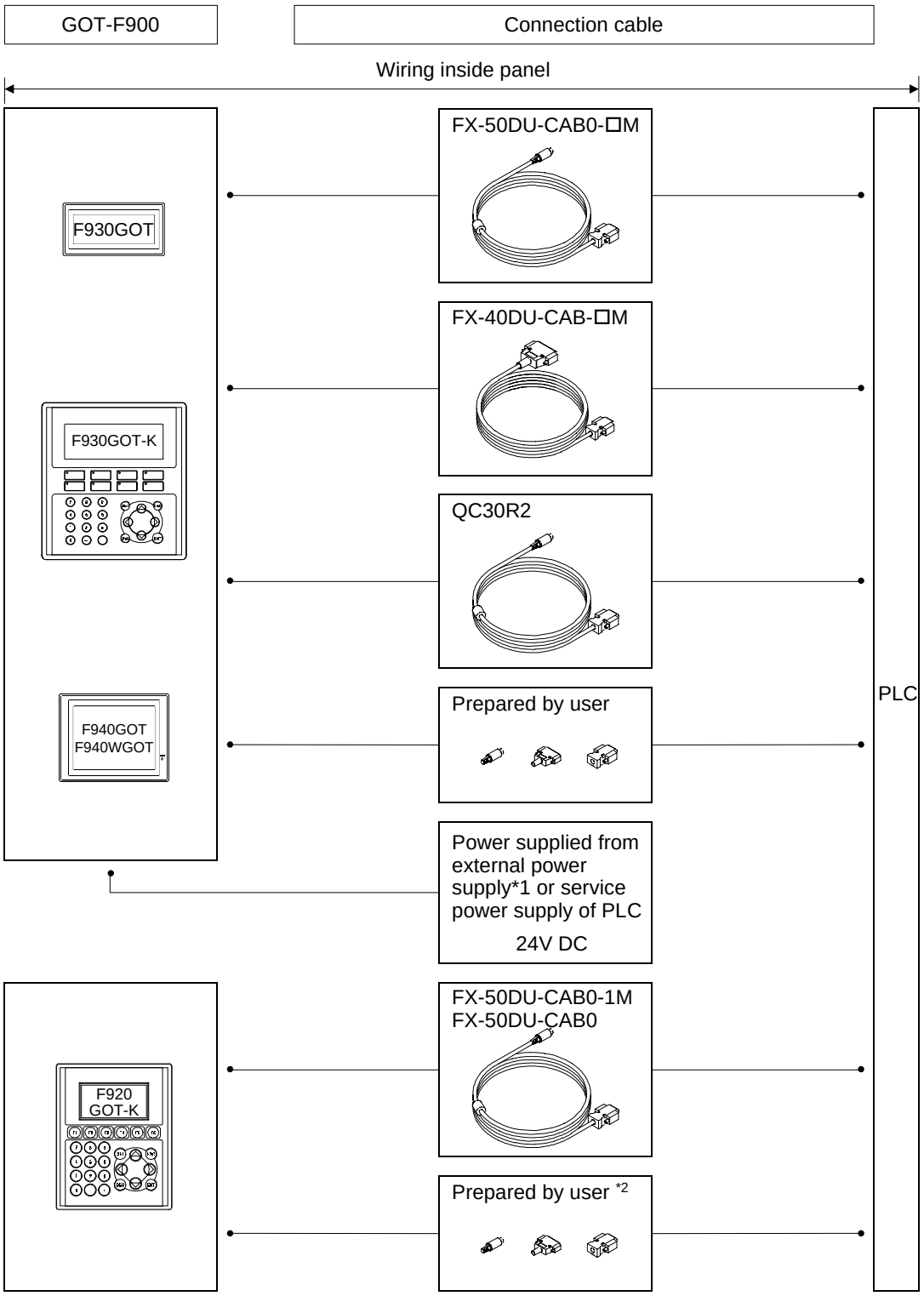
*3.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting of Connected Equipment for GOT | You can learn the method to make the functions and LEDs of the function keys available using the screen creation software. | 4.9 |

## 4.1 Outline of Connection

This section explains the outline of the cables connecting the GOT-F900 to the PLC.

**Panel installation**



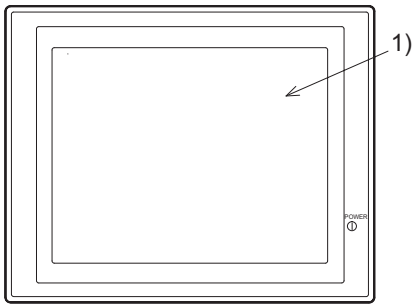

*1 Because the F940WGOT consumes much current, it cannot be connected to the service power supply of the PLC. Prepare an external power supply.

*2 The cable to connect the F920GOT-K to the FX1, FX, FX2, FX2C, A, and QnA Series PLC needs to be prepared by the user. The 5V DC power is supplied from the PLC.

## 4.2 Name of Each Part

### 4.2.1 Front Panel

Example: Front panel of F940GOT



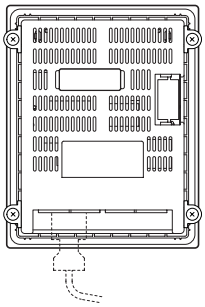

**1) Display**

- F920GOT-K
  Graphic display of 128 × 64 dots
  Character string: 16 characters × 4 lines
- F930GOT/F930GOT-K
  Graphic display of 240 × 80 dots
  Character string: 30 characters × 5 lines
- F940GOT
  Graphic display of 320 × 240 dots
  Character string: 40 characters × 15 lines
- F940WGOT
  Graphic display of 480 × 234 dots Character string: 60 characters × 14 lines

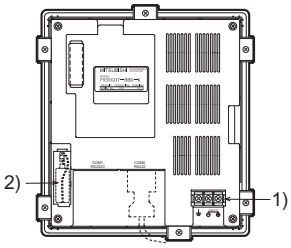
• Alphabets and numbers can be displayed in the size of ×1/2 to ×4 in height and ×1 to ×4 in width.

### 4.2.2 Rear Panel

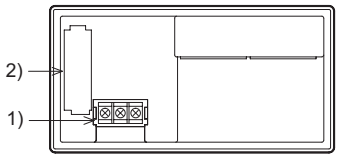
F920GOT-K



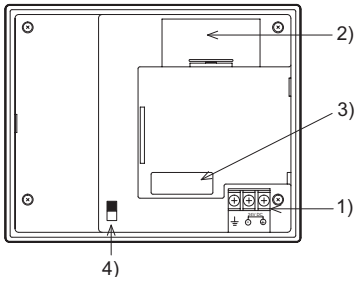
F930GOT-K



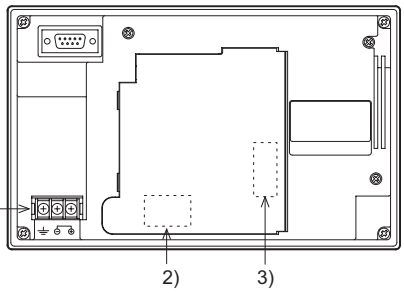

F930GOT




F940GOT




F940WGOT




**1) Power terminals:**
Supply the power to the GOT-F900 and perform the grounding. (excluding the F920GOT-K)

**2) Battery:**
Stores the sampling data, the alarm history and the current time.
The screen data is stored in the built-in flash memory, and kept stored even if the life of the battery is expired.

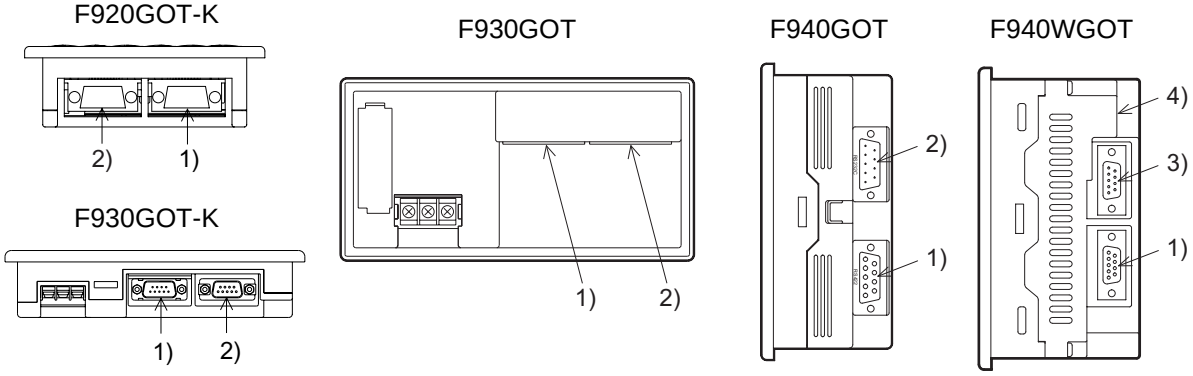
| | F930GOT, F930GOT-K | F940GOT, F940WGOT |
|---|---|---|
| Battery model name | FX2NC-32BL | PM-20BL |

**3) Extension interface:**
Connects an optional extension equipment.
This interface is used to connect the screen data transfer adapter F9GT-40UMB and write the screen data stored in the EPROM at high speed. (F940GOT)
This interface is used to connect the screen data transfer adapter F9GT-40FMB and transfer the screen data stored in the FLASH memory at high speed. (F940GOT, F940WGOT)

**4) CN/OP selector switch:**
Not used (Set it to "OP" usually.)

### 4.2.3 Function of Ports

Connect a PLC unit and peripheral equipment to the following ports of the GOT.




**1) PLC port (RS-422) 9-pin D-Sub, female**

- Connect here a PLC through RS-422.
- Use this port also to connect two or more GOT units (through RS-422). (excluding the F920GOT-K)

**2) Personal computer/PLC port (RS-232C) 9-pin D-Sub, male**

- Connect here a personal computer to transfer the screen data created by the screen creation software.
- Use this port also to connect a PLC or microcomputer board through RS-232C. (In the F920GOT-K, only Q Series PLC can be connected.)
- Use this port also to connect two or more GOT units (through RS-232C), a bar code reader or a printer. (excluding the F920GOT-K)
- The two-port interface function is available. (A personal computer which has started up the PLC software can be connected here.)

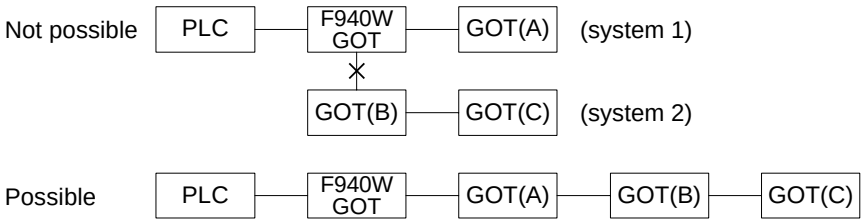
**3) PLC port (RS-232C) 9-pin D-Sub, male**

- Connect here a PLC or micro computer board through RS-232C.
- When using the F940WGOT, use this port also to connect two or more GOT units (through RS-232C), a bar code reader or a printer.

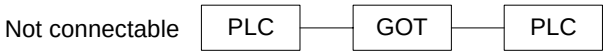
**4) Personal computer port (RS-232C) 9-pin D-Sub, male**

- Connect here a personal computer to transfer the screen data created by the screen creation software.
- This port is not available to connect a PLC.
- Use this port to connect a printer or bar code reader.
- Another GOT can be connected here only when the PLC is connected to 3) RS-232C port.
- The two-port interface function is available. (A personal computer which has started up the PLC software can be connected here.)

- When connecting a PLC through a computer link unit, use the port 1), 2) or 3).
  In the F940WGOT, when connecting a personal computer and transferring the screen data, use the port 4).
- F940WGOT has two serial ports besides one port for PLC. In connecting two or more GOT units, however, only one of the ports can be used to configure a system. The other port can be used for a printer or a personal computer.




- Only one PLC can be connected to one GOT.

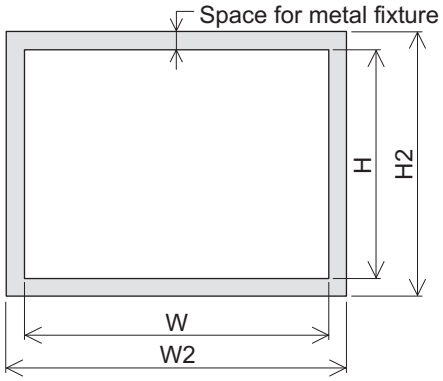


## 4.3 Processing of Panel Face

This section explains the panel cut dimension in processing the panel face on which the GOT-F900 is to be installed.

### 4.3.1 Panel Cut Dimension

On the panel face, drill an installation hole of the dimension shown below.
In addition to the panel cut dimension, the space for metal fixture is required by approximately 10 mm in the left, right, up and down directions respectively.
For the details, refer to "2) Installation space" below.




**1) Panel cut dimension** **Unit: mm (inches)**

| | F920GOT-K | F930GOT | F930GOT-K | F940GOT | F940WGOT |
|---|---|---|---|---|---|
| W | 91 (3’ 58”) | 137 (5’ 39”) | 155 (6’ 10”) | 153 (6’ 02”) | 206 (8’ 11”) |
| H | 119 (4’ 69”) | 66 (2’ 60”) | 170 (6’ 69”) | 121 (4’ 76”) | 124 (4’ 88”) |

- Make sure that the processing accuracy is 0 to +1 mm.
- Make sure that the thickness of the installation panel is 5 mm or less.

**2) Installation space (Reference)**

For the details, refer to the next page. Unit: mm (inches)

| | F920GOT-K | F930GOT | F930GOT-K | F940GOT | F940WGOT |
|---|---|---|---|---|---|
| W2 | 109 (4’ 29”) | 136 (5’ 35”) | 174 (6’ 85”) | 172 (6’ 77”) | 225 (8’ 86”) |
| H2 | 119 (4’ 69”) | 85 (3’ 35”) | 189 (7’ 44”) | 140 (5’ 51”) | 143 (5’ 63”) |

- The dimension above is offered for reference.

## 4.4 Installation

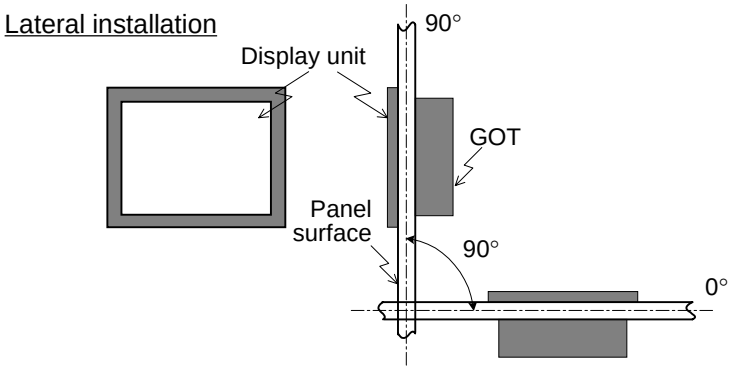
This section explains the caution on installation of the GOT-F900 on the panel face as well as the installation procedure.

### 4.4.1 Caution on installation

When installing the GOT on the control panel, etc., make sure that the display unit is set at an angle shown in the figure below.
If the GOT is installed at any other angle, the GOT may be deteriorated earlier.

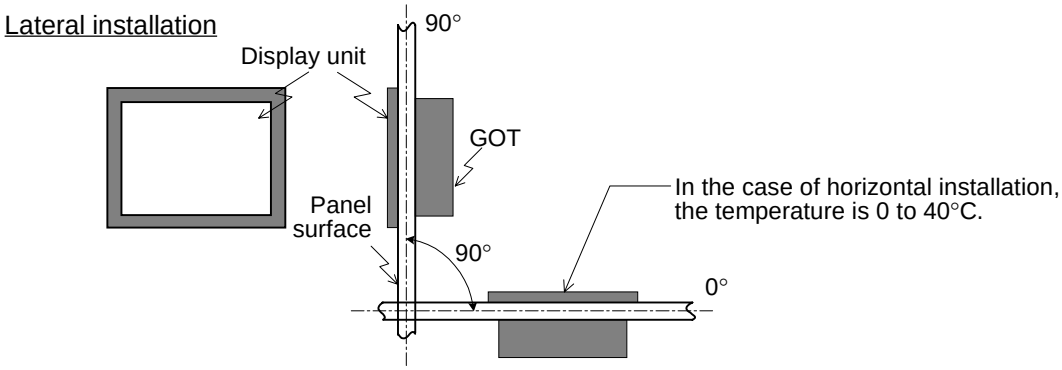
**1) F920GOT-K, F930GOT, F930GOT-K and F940GOT**

When installing the GOT inside the panel while placing the screen laterally, set the installation angle to 0 to 90° while the temperature inside the panel during operation is 0 to 50°C.

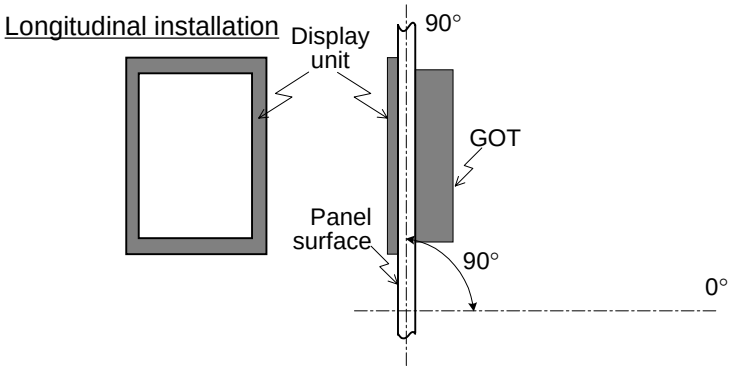



**2) F940WGOT**

When installing the GOT on the panel surface while placing the screen laterally, set the installation angle to 90° while the temperature inside the panel during operation is 0 to 50°C. When the required installation angle is other than 90°, then the temperature should be 0 to 40°C.




When installing the GOT on the panel surface while placing the screen longitudinally, set the installation angle to 90° while the temperature inside the panel during operation is 0 to 40°C.



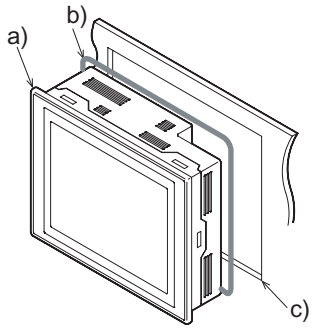
### 4.4.2 Installation procedure

The GOT-F900 is so designed as to be embedded in the panel. Install the GOT using the procedure shown below. For the panel cut dimension, refer to the previous page.

**1) Inserting the GOT into the panel face**

Attach a packing to the GOT. Insert the GOT from the front of the panel face.

a) GOT
b) Packing
c) Installation hole



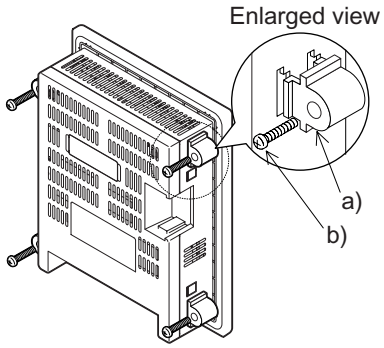

**1) Fixing the GOT**

Hang the hook of the metal fixture (offered as accessory) to installation hook holes in the GOT. Tighten a tightening bolt (offered as accessory) securely in each position.
The GOT can be fixed in four positions at corners. However, to prevent dusts and water, fix the GOT in six positions (excluding the F930GOT).

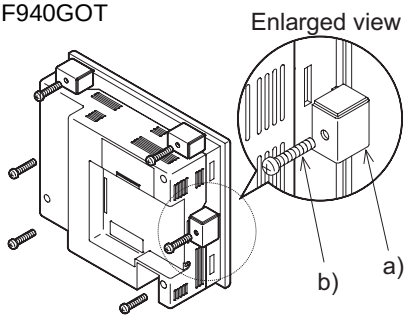
a) Metal fixture
b) Tightening bolt

* Make sure that the tightening torque for each tightening bolt is 0.3 to 0.5 N·m.
(0.18 to 0.22 N·m when installing the F920GOT-K)

F920GOT-K




F940GOT



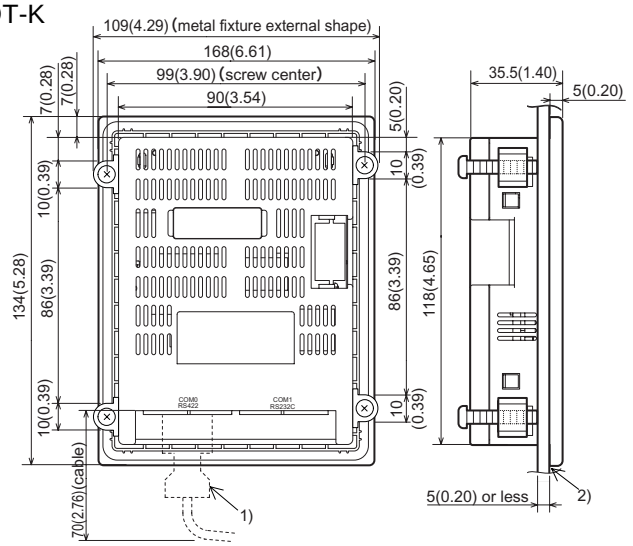
**2) Inner dimension of the panel required for installation**

When installing the GOT, take into consideration the inner dimension shown below.

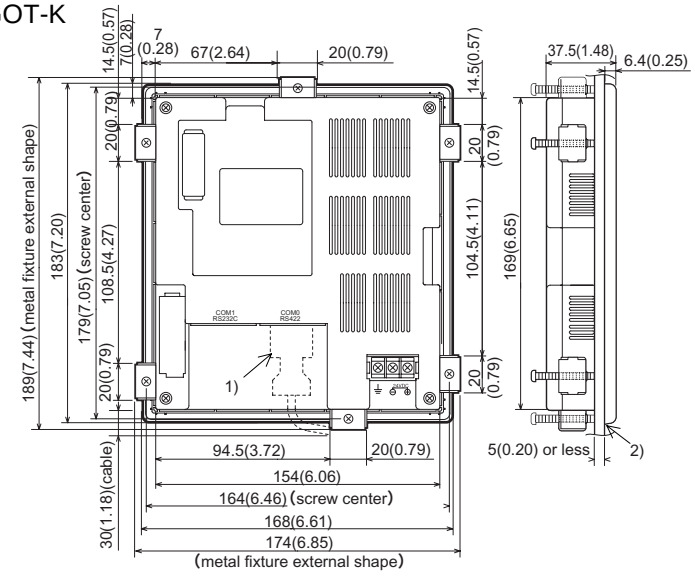
a) PLC cable

b) Packing

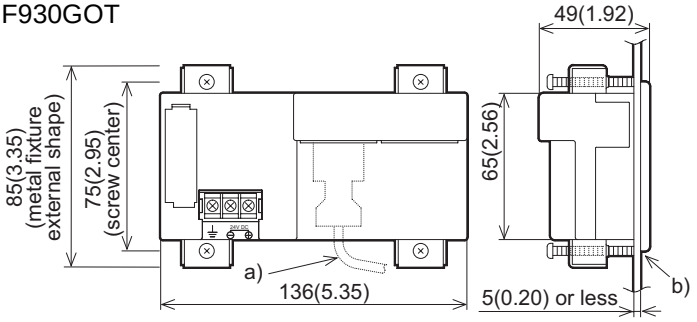
F920GOT-K




F930GOT-K

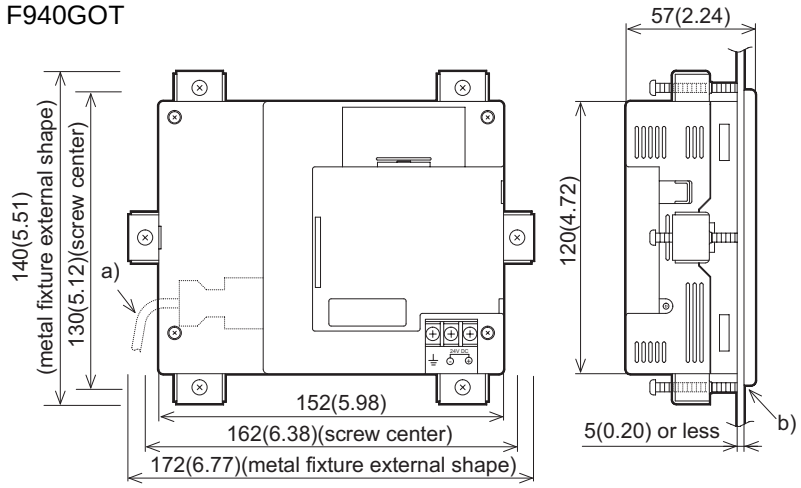



F930GOT

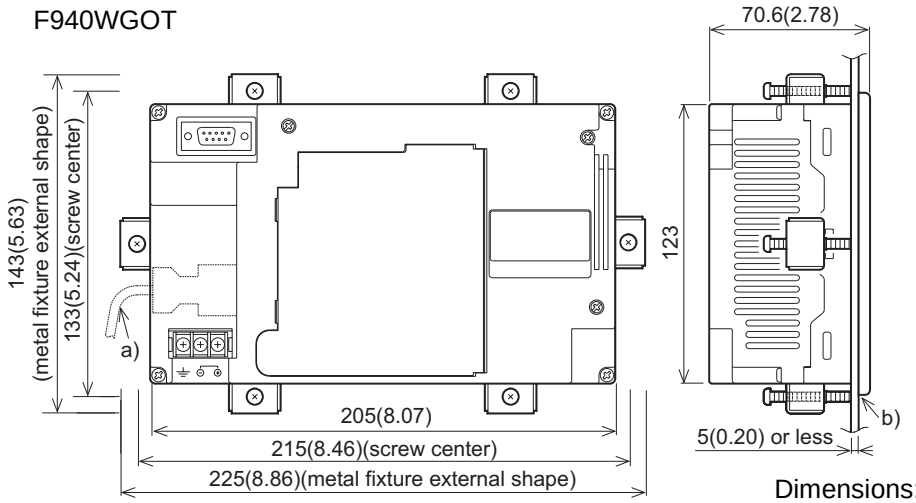



Dimensions: mm (inches)

F940GOT




F940WGOT

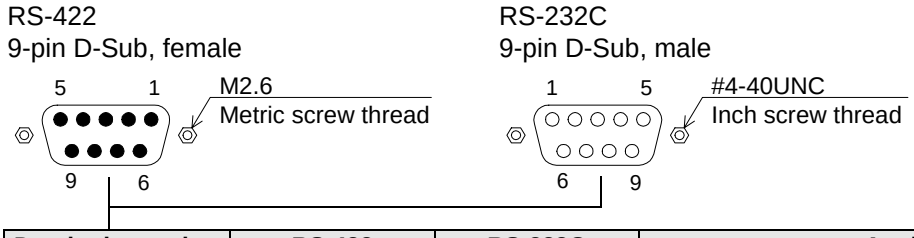



Dimensions: mm (inches)

## 4.5 Connector Pin Layout and Signal Name (Excluding the F920GOT-K)

The figure below shows the pin layout in the serial interface connector built in the GOT-F900.

**F930GOT/F930GOT-K/F940GOT/F940WGOT**

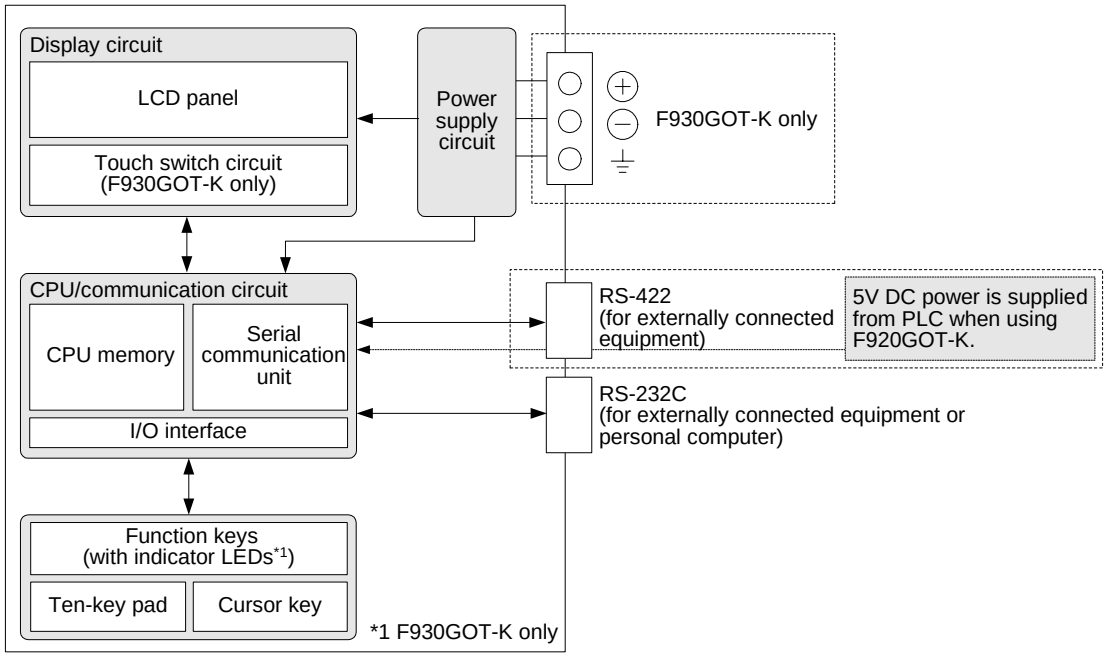



| D-sub pin number | RS-422 | RS-232C | Application |
|---|---|---|---|
| 1 | TXD+(SDA) | NC | Signal wire for communication with PLC (For the wiring, refer to the section corresponding to the connected PLC.) |
| 2 | RXD+(RDA) | RD(RXD) | |
| 3 | RTS+(RSA) | SD(TXD) | |
| 4 | CTS+(CSA) | ER(DTR) | |
| 5 | SG(GND) | SG(GND) | |
| 6 | TXD-(SDB) | DR(DSR) | |
| 7 | RXD-(RDB) | RS(RTS) | |
| 8 | RTS-(RSB) | CS(CTS) | |
| 9 | CTS-(CSB) | User cannot use | |

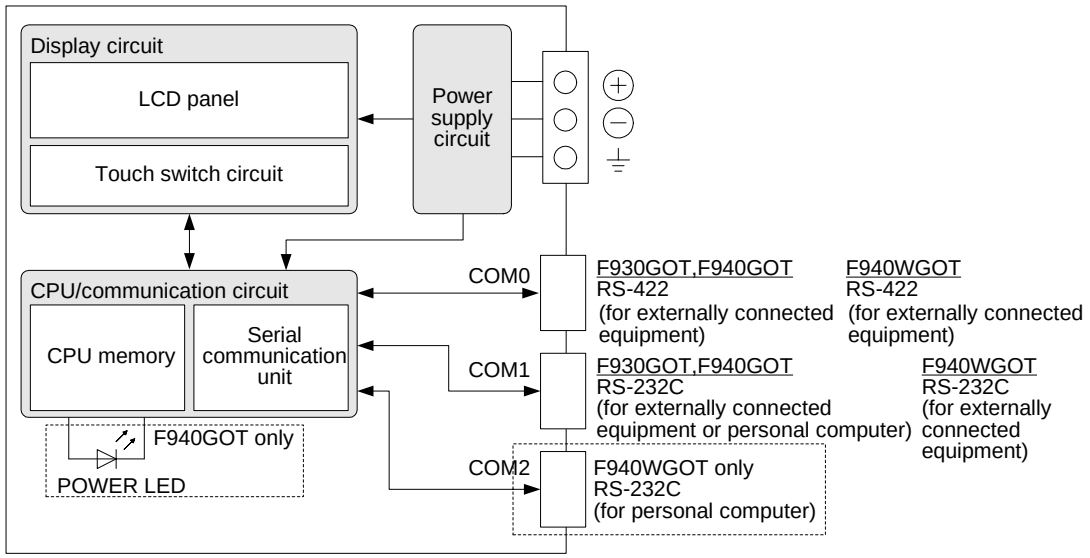
## 4.6 Outline of Internal Wiring

The figure below shows the internal wiring of the GOT-F900.

**F920GOT-K/F930GOT-K**




**F930GOT/F940GOT/F940WGOT**



## 4.7 Wiring for 24V DC and 5V DC Power Supply and Class D Grounding

To the F930GOT/F940(W)GOT, the power is supplied from the PLC or from the external power supply.

**1) Current consumption in the GOT-F900**

The table below shows the current consumption in each case.

| GOT-F900 | Current consumption | Remarks |
|---|---|---|
| F920GOT-BBD5-K | 220mA/5V DC | Power is supplied from PLC via communication cable. |
| F930GOT-BWD-E | 200mA/24V DC | |
| F930GOT-BBD-K | 220mA/24V DC | |
| F940GOT-LWD-E | 390mA/24V DC | |
| F940GOT-SWD-E | 410mA/24V DC | |
| F940WGOT-TWD-E | 650mA/24V DC | At power ON, 750 mA/24V DC maximum is applied. |

a) In the case of F920GOT-K

5V DC is supplied from the PLC.
The F920GOT-K can be connected to the FX1N-422-BD or FX2N-422-BD extension board mounted on the FX1S/FX1N/FX2N Series PLC.
Before connecting, learn the restrictions described in Chapter 8.

b) In the case of F930GOT and F940GOT

When supplying the power from the service power supply of the FX Series PLC or extension unit, take into consideration the total current supplied to proximity switches and extension blocks. If the total current exceeds the capacity of the service power supply, supply the power from the external power supply.

c) In the case of F940WGOT

The current consumption is as shown in the table above. Supply the power from the external power supply.

**2) Momentary power failure (excluding the F920GOT-K)**

Even if momentary power failure of less than 5ms occurs in the power supply, the GOT-F900 continues the operation.
If long-time power failure or voltage drop occurs, the GOT-F900 stops the operation. When the power supply is recovered, the GOT-F900 automatically displays the title screen and then an user screen.

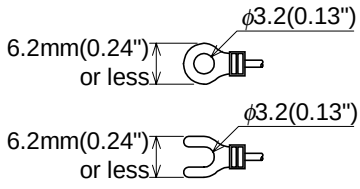
**3) Electric wires to be used (excluding the F920GOT-K)**

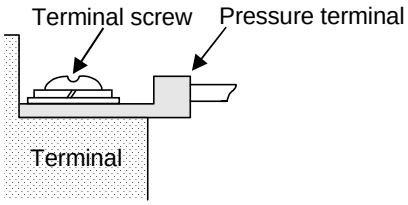
Use electric wires of 0.75mm$^2$ or more in the wiring of the power supply so that voltage drop does not occur. Use solderless terminals for M3, and tighten them securely with the tightening torque of 0.5 to 0.8 N•m so that troubles are not caused.

### 4) Recommended feature size of terminal

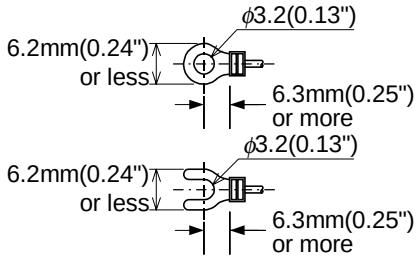
F920GOT-K
No terminal block is provided.

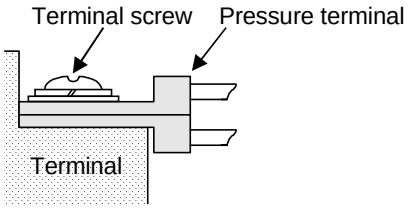
F940GOT



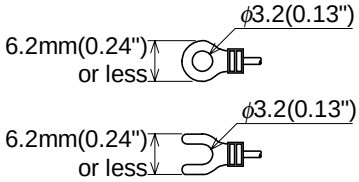

When wiring one cable to a terminal

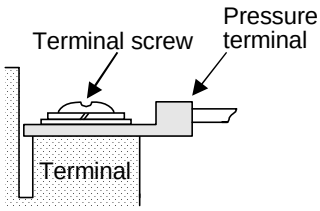


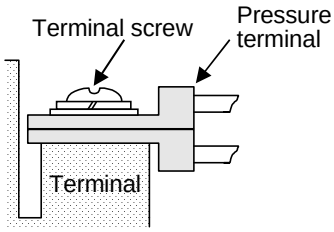

When wiring two cables to a terminal

F930GOT/F930GOT-K/F940WGOT



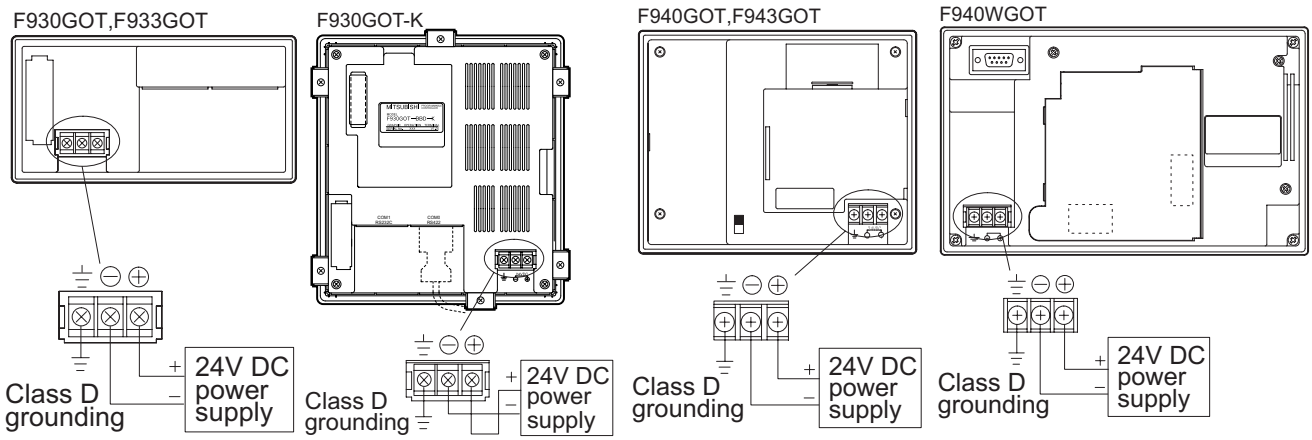

When wiring one cable to a terminal




When wiring two cables to a terminal

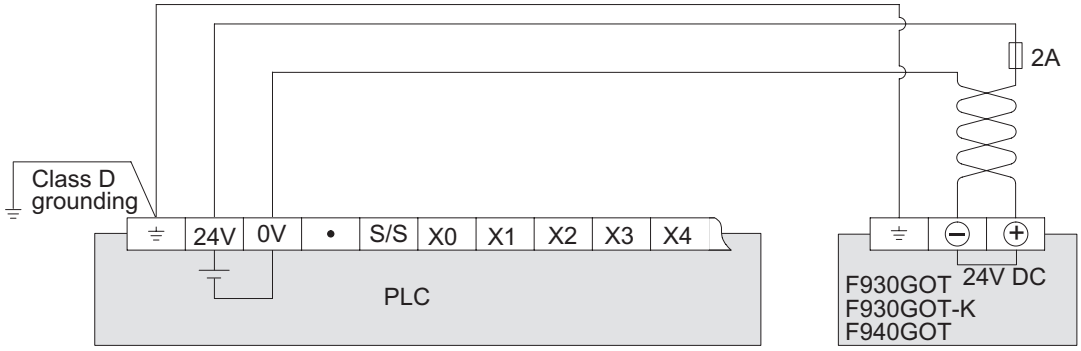
### 5) Wiring

Install wiring from 24V DC power supply and class D grounding to the terminal block on the rear panel of the GOT-F900.
No wiring is required because power is supplied to the F920GOT-K via a communication cable.



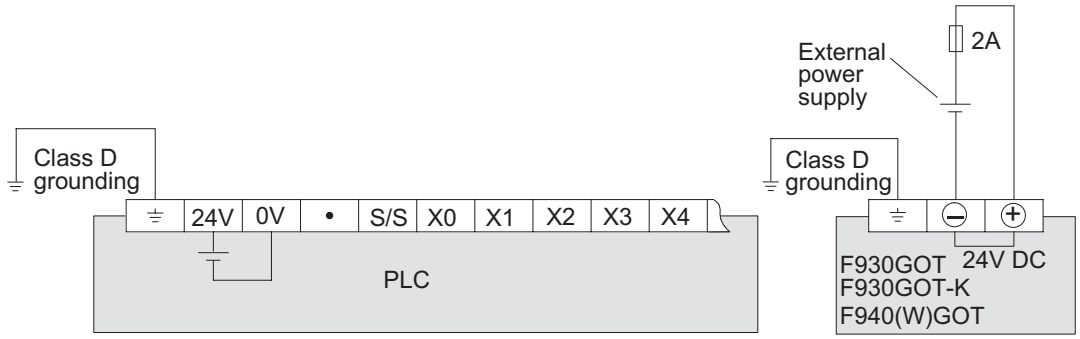
a) Example when the power is supplied from the PLC

Connect the power terminal of the F930GOT/F930GOT-K/F940GOT to the 24V DC service power supply of the PLC or extension unit.




b) Example when the power is supplied from the external power supply

Connect the power terminal of the F930GOT/F930GOT-K/F940(W)GOT to the 24V DC external power supply.
When the input power supply of the external power supply is different perform dedicated grounding ( ⏚ ) to the PLC and to the F930GOT/F930GOT-K/F940(W)GOT separately.

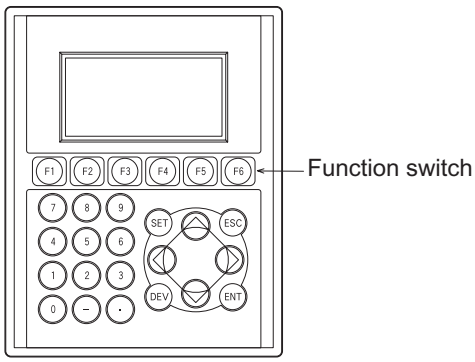


## 4.8 Handling of Function Keys (F1 to F8)

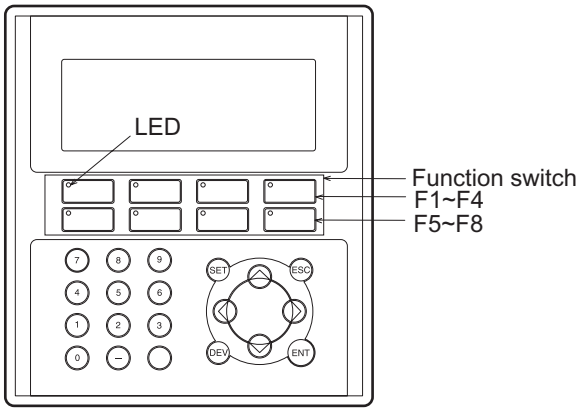
The ON/OFF status of the function keys is transmitted to the PLC via a communication cable.

**Allocation of keys**

F920GOT-K




F930GOT-K




Six function keys (F1 to F6) are provided. Eight function keys with green LEDs (F1 to F8) are provided.

**Setting in the screen creation software**

Select the followings on the menu in the screen creation software.

| | GT Designer | DU/WIN |
|---|---|---|
| Functions of function key | "Common"-"Operation Panel" | – |
| LED display on function key | "Draw"-"Animation Display"-"Lamp" | – |

### 4.8.1 Use of function keys

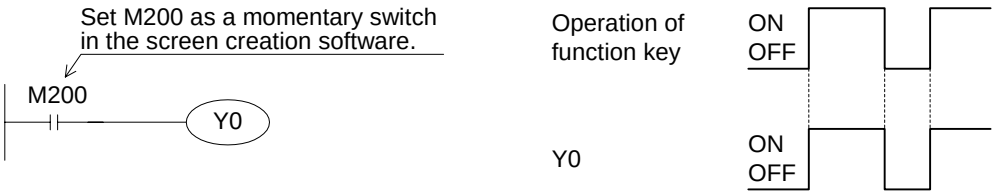
This section explains the use of the function keys and the indicator LEDs (only in the F930GOT-K).

**1) Wiring of function keys**

No wiring of the function keys is required because the keys and the connected equipment (PLC) communicate via a communication cable.

**2) Input of function keys**

The operations of the function keys (alternate/momentary, set/reset, screen changeover) can be set in the screen creation software.
The LED is turned ON/OFF by turning ON/OFF the devices allocated to each function switch in reference to Allocation of device to control LED below.




**3) Lighting of LEDs on function keys (Available in the F930GOT-K)**

No wiring of the LEDs (1 to F8) is required because the LEDs and the connected equipment (PLC) communicate via a communication cable. A green LED is lit when the device allocated to the function key using the screen creation software is turned ON.

a) Allocation of device to control LED

| Device | Function key |
|---|---|
| M100 | Function key SW1 Green |
| M101 | Function key SW2 Green |
| M102 | Function key SW3 Green |
| M103 | Function key SW4 Green |
| M104 | Function key SW5 Green |
| M105 | Function key SW6 Green |
| M106 | Function key SW7 Green |
| M107 | Function key SW8 Green |

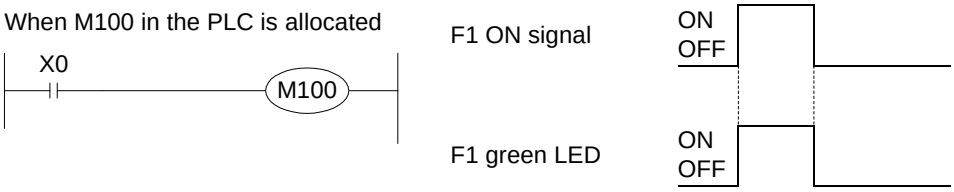
← Set this device using the screen creation software. The LEDs for the function keys can be allocated successively.

b) Setting in creation software

The devices to display the indicator LEDs on function keys should be set in the screen creation software.
For details, refer to Setting of connected equipment for GOT described later.

c) Program example

The indicator LEDs on the function keys can be controlled by the PLC by turning ON/OFF the devices allocated in the screen creation software.



### 4.8.2 Preparation of Function Key Name Sheet (Available in the F930GOT-K)

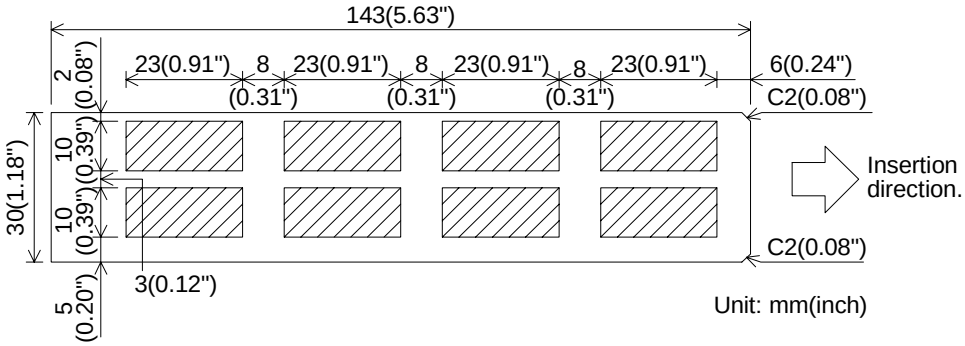
This section explains how to prepare the function key name sheet.

**1) Preparing the name sheet**

a) Make the mount sheet in reference to the following dimensions and prepare an OHP sheet (transparent and colorless sheet).

b) Write down the names of the switches used on the mount sheet.

Function key



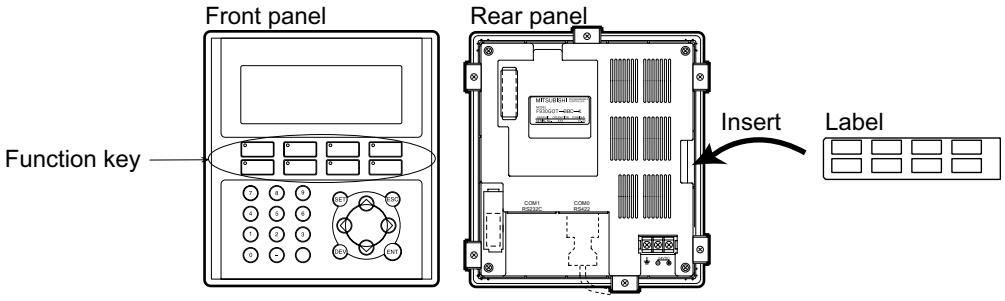

Note: The shaded parts indicate the effective range for characters.

c) When the work in b) is completed, copy the contents of the name sheet base on an OHP sheet in the actual dimensions (100%) using a copy machine.
When using a different OHP sheet, use the following type. Make sure that the selected OHP sheet can be used in a copy specification.

[Recommended OHP sheet]
Material: Polyester film
Thickness: 0.1mm (0.004")

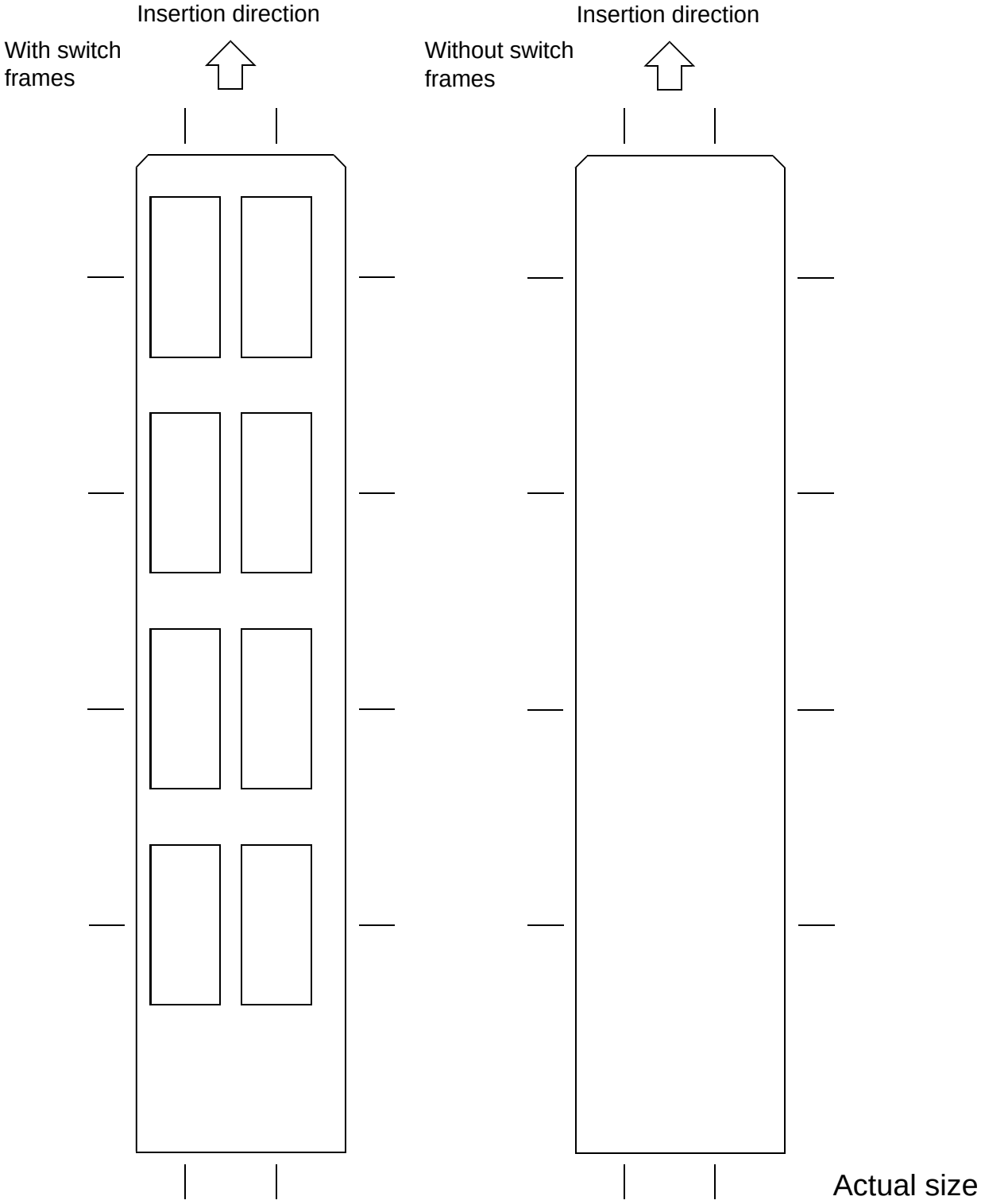
**2) Attaching the sheet**

Insert it into the following position shown below of the F930GOT-K.



### 4.8.3 Label pattern (F930GOT-K)

Copy this pattern to the OHP sheet offered as an accessory.



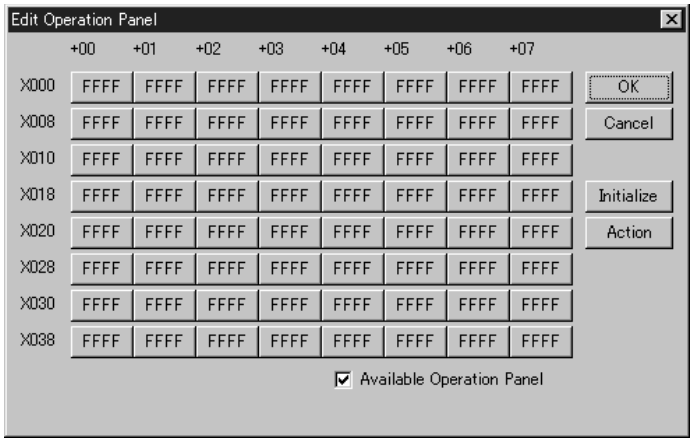
## 4.9 Setting of Connected Equipment for GOT

The setting in the screen creation software is required to turn on and off the function keys and LED display using the connected equipment. This section describes the setting method.

### 1) GOT-F900 Series

No setting is enabled on the GOT. Set items in either one of the screen creation software mentioned below.

### 2) GT Designer

| Operation | | Display (screen name) |
|---|---|---|
| [Setting] | a) It is supposed that the GT Designer has started up and the screen data to be set is read.<br>b) Open a user screen to be set. (Any screen is available as far as it has been already created.) | |
| [LED setting] | c) Select "Draw"-"Animation Display"-"Lamp" on the menu.<br> <br>d) On the "Basic" tab, click "Lamp (External)" to display the check mark (✓), click the [Device] button, input a bit device to be assigned, then click [OK].<br>Refer to Caution on setting of "Lamp (External)" described later. | The "Lamp" dialog box appears. |
| [Switch setting]<br>Function key | e) On the menu, select "Common"-"Operation Panel".<br>  <br>f) Click "Available Operation Panel" to display the check mark (✓).<br>Refer to "Function key setting" described later. | "Edit Operation Panel" dialog box appears. |

**Caution on setting of "Lamp (External)"**

1. The contents of "Lamp (External)" you have set are not displayed on the screen.
2. The check box is valid only in the F930GOT-K/Handy GOT. Never set the check box in any other series.
3. Set only one lamp for all screens of the created screen data.
4. Make sure that the bit device assigned on the "Basic" tab in "Lamp" dialog box is not included in the read/write device range set in "Common"-"System Information".

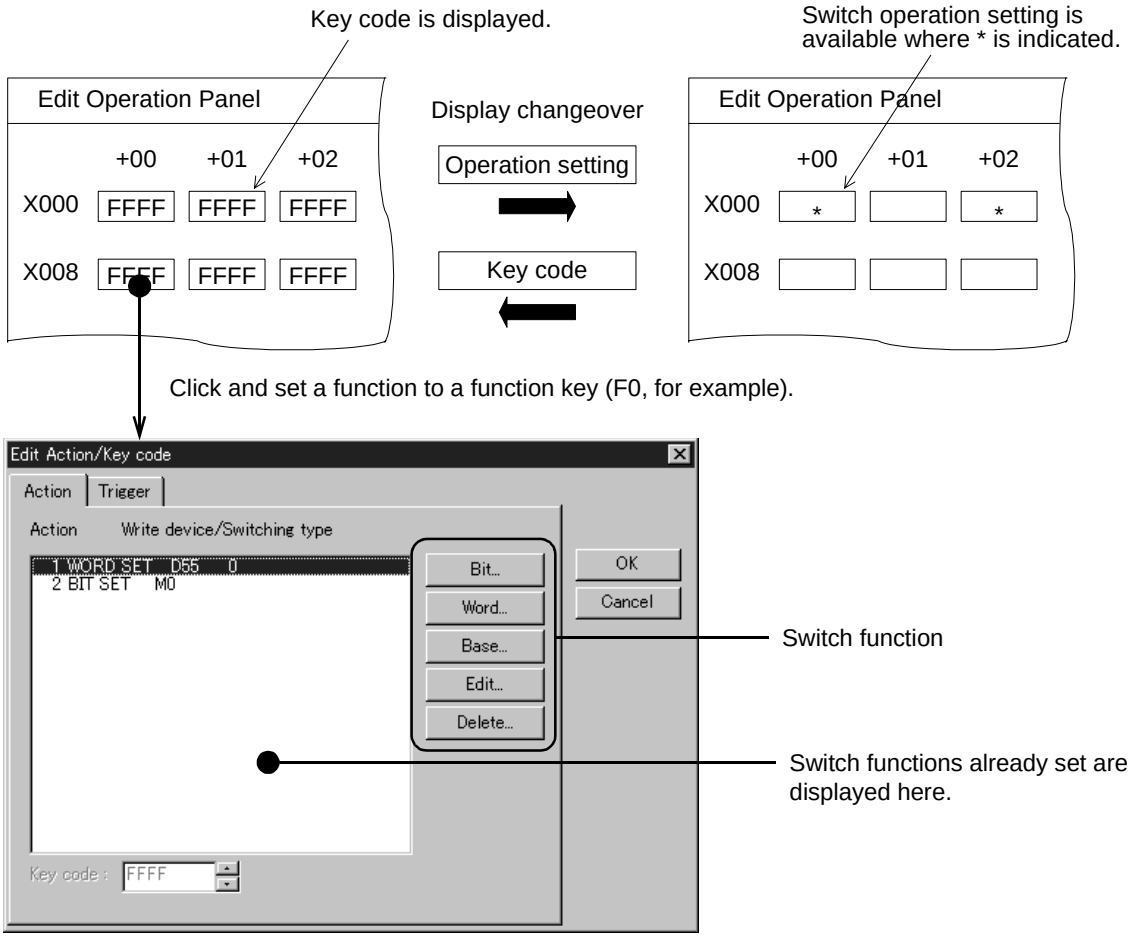
**Function key setting**

The operations can be set to the switches from F0 using the devices (from +00 of X000) on the operation panel setting screen in the screen creation software.
The setting method and operations are the same as those of the touch keys, however, no key code setting is available. Note that the device names of X000 do not indicate the device names in the connected equipment (PLC).

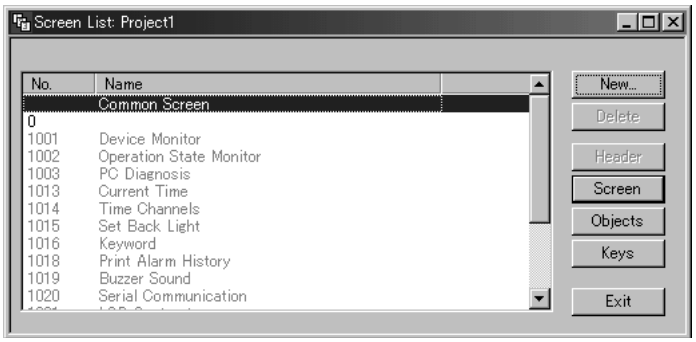
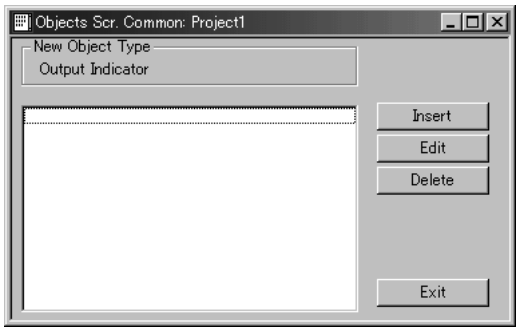
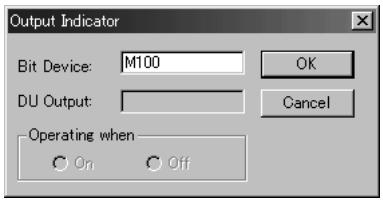
**Allocation table of function key**

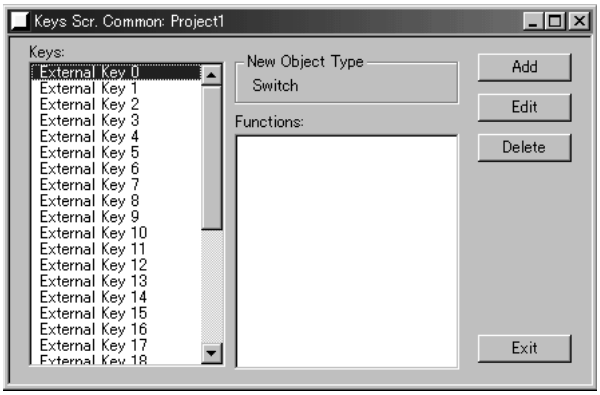
| | | +00 | +01 | +02 | +03 | +04 | +05 | +06 | +07 |
|---|---|---|---|---|---|---|---|---|---|
| F920GOT-K | X000 | F1 | F2 | F3 | F4 | F5 | F6 | – | – |
| F930GOT-K | X000 | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |

**Screen display of GT Designer**



### 3) DU/WIN

| Operation | | Display (screen name) |
|---|---|---|
| [Setting] | a) It is supposed that the DU/WIN has started and the screen data to be set has been read.<br>b) Select "Common Screen" on the "Screen List" window (by clicking it to be highlighted).<br>  <br>If the window is closed, select "View/Project"-"Screen List" on the menu. | |
| [LED setting] | c) Click the [Objects] button. | The "Objects Scr. Common" window appears. |
| | d) Select "Object"-"Indicator"-"Output Indicator" on the menu.<br>  | "Output Indicator" is displayed in the "New Object Type" field on the "Objects Scr. Common" window. |
| | e) Click the [Insert] button.<br>  <br>Input a bit device to be assigned, and click [OK].<br>Refer to Caution on setting of "Output Indicator" below.<br>Close all windows except the "Screen List" window. | The "Output Indicator" dialog box appears. |
| [Switch setting] | f) Select "Common Screen" on the "Screen List" window (by clicking it to be highlighted).<br>To enable the switch function for all the screens, select "Common Screen". To enable it for an user screen, select an arbitrary screen.<br>If the "Screen List" window is closed, select "View/Project"-"Screen List" on the menu. | |

| Operation | | Display (screen name) |
|---|---|---|
| [Switch setting] | g) Click the [Keys] button.<br>  <br><br>h) Allocate a switch operation to an External Key (n) in the "Keys" list pressing the [Add] button.<br>Refer to Setting of function key below. | The "Keys Scr. Common" window appears. |

Caution on setting of "Output Indicator"

1. The contents of "Output Indicator" you have set are not displayed on the screen.
2. The check box is valid only in the F930GOT-K and Handy GOT. Never set the check box in any other series.
3. Set "Output Indicator" only on the common screen. Even if it is set on a user screen, it does not function.
4. Make sure that the bit device assigned on the "Output Indicator" dialog box is not included in the bit device range in set "View/Project"-"System Settings"-"Interface Devices".

### Setting of function key

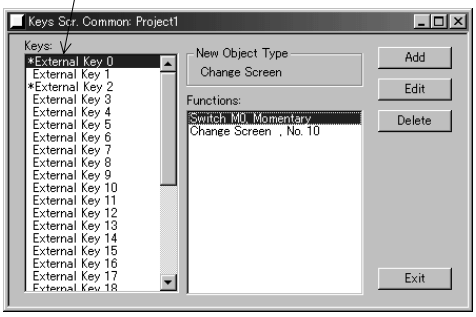
Switch operations can be set to the devices (External Key 0 to 7) corresponding to F0 to F7.
The setting method and operations are the same as 'function allocation' for touch keys, however, note that no key code setting is available.

#### Table of function key allocation

| DU/WIN | F920GOT-K | F930GOT-K |
|---|---|---|
| External Key 0 | F1 | F1 |
| External Key 1 | F2 | F2 |
| External Key 2 | F3 | F3 |
| External Key 3 | F4 | F4 |
| External Key 4 | F5 | F5 |
| External Key 5 | F6 | F6 |
| External Key 6 | Cannot be used | F7 |
| External Key 7 | Cannot be used | F8 |

#### Screen of DU/WIN

* mark indicates switch operation has already allocated.



# 5. Installation and Wiring of Handy GOT

**Cautions on Installation**

- Use the Handy GOT in the environment for the general specifications described in this manual.
  Never use the Handy GOT in a place with dusts, soot, conductive dusts, corrosive gas or flammable gas, place exposed to high temperature, condensation or wind and rain, or place subject to vibrations and impacts.
  If the Handy GOT is used in an unfavorable place described above, electrical shock, fire or malfunction, damages or deterioration of the Handy GOT may be caused.
- Never drop cutting chips and electric wire chips into the ventilation window of the Handy GOT when you drill screw holes or perform wiring.
  Otherwise, fire, failure or malfunction may be caused.
- Connect connection cables securely to the specified connectors while the power is turned OFF.
  Imperfect connection may cause malfunction or failure.
- When connecting cables, pay attention to the contents described in this section.
  Especially, attach the rear cover so that PCBs inside the Handy GOT are not interfered with connection cables.

**Caution on Wiring**

- Make sure to shut down all phases of the power supply outside the Handy GOT before starting the installation or wiring work.
  Otherwise, electrical shock and damages of the Handy GOT may be caused.

**Caution**

- The Handy GOT has the DC power supply specifications. Connect the DC power cable to the dedicated terminals described in this manual.
  If the AC power supply is connected to power terminals or an operation/emergency stop switch, the Handy GOT may be burnt.
- Perform Class D grounding to the ground cable (FG) of the Handy GOT. However, never perform common grounding with the strong electrical system.

**Caution on Design**

- While executing monitoring in the GOT (GOT-F900), if a communication error (including disconnection of a cable) occurs, communication between the GOT and the PLC CPU is interrupted and the GOT is disabled.
  When establishing the system configuration using the GOT, make sure that a switch which gives a significant operation to the system is executed from any equipment other than the GOT while postulating communication error in the GOT. Otherwise, accidents may be caused by incorrect output and malfunction.

**Caution**

- Do not bind the control cable and the communication cable together with the main circuit and the power line. Keep such cables off the main circuit and the power line by 100 mm or more.
  Otherwise, malfunction may be caused by noise.
- Make sure to press touch keys on the display screen with hand. If touch keys are subject to an excessive force or pressed by a hard or sharp object, they may fail.

**Note**

- Even if momentary power failure of less than 5 ms occurs in the power supply, the Handy GOT continues the operation.
  If long-time power failure or voltage drop occurs, the Handy GOT stops the operation. When the power supply is recovered, the Handy GOT restarts the operation.

This section explains installation, wiring and usage of the operation switches and the grip switch as well as control of the LEDs for switch pressing confirmation in the following order.

**Wiring Procedure**

This section introduces the procedure to connect the Handy GOT to connected equipment such as PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| Outline of Connection | You can learn the outline of the connection method. | 5.1 |
| Name of each Part | You can learn the name of each part of the Handy GOT. | 5.2 |
| Installation | You can learn how to install the Handy GOT. | 5.3 |
| Selection and Installation of External Cable | You can select cables. This section introduces the procedure to connect cables to the Handy GOT.<br>When preparing a cable, you can learn signal names of connectors and untied wires. | 5.4 |
| Processing Panel Face of Control Box or Cabinet | You can learn the dimension of the processing on the panel face required to use the Handy GOT with attachment to and removal from the panel face. This section introduces types of relay cables. | 5.5 |
| Pin Layout and Signal Allocation of Connector for Serial Communication and Operation Switches | You can check the signal allocation of connector or untied wires when preparing a cable. | 5.6 |

*2.* Wiring

| Item name | Description | Reference |
|---|---|---|
| Outline of Internal Wiring | You can check block diagrams of portions requiring wiring and the internal wiring. | 5.7 |
| Wiring for 24V DC Power Supply and Class D Grounding | You can check the methods to wire the 24V DC power supply and perform Class D grounding. | 5.8 |
| Wiring and Handling of Operation Switches SW1 to SW4 | You can learn how to use and wire the operation switches. (Setting in the screen creation software is required.) | 5.9 |
| Wiring and Handling of Emergency Stop Switch (ES1) | You can learn how to use and wire the emergency stop switch. | 5.10 |
| Handling of grip switch (excluding RH model) | You can learn how to use the grip switch. | 5.11 |
| Handling of grip switch (RH model only) | You can learn how to use the grip switch. | 5.12 |
| Handling of Keylock Switch | You can learn how to use the keylock switch (RH model only). | 5.13 |

*3.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting of Connected Equipment for GOT | Using the screen creation software, you can enable the operation switch LEDs and the grip switch. | 5.14 |

*4.* Others

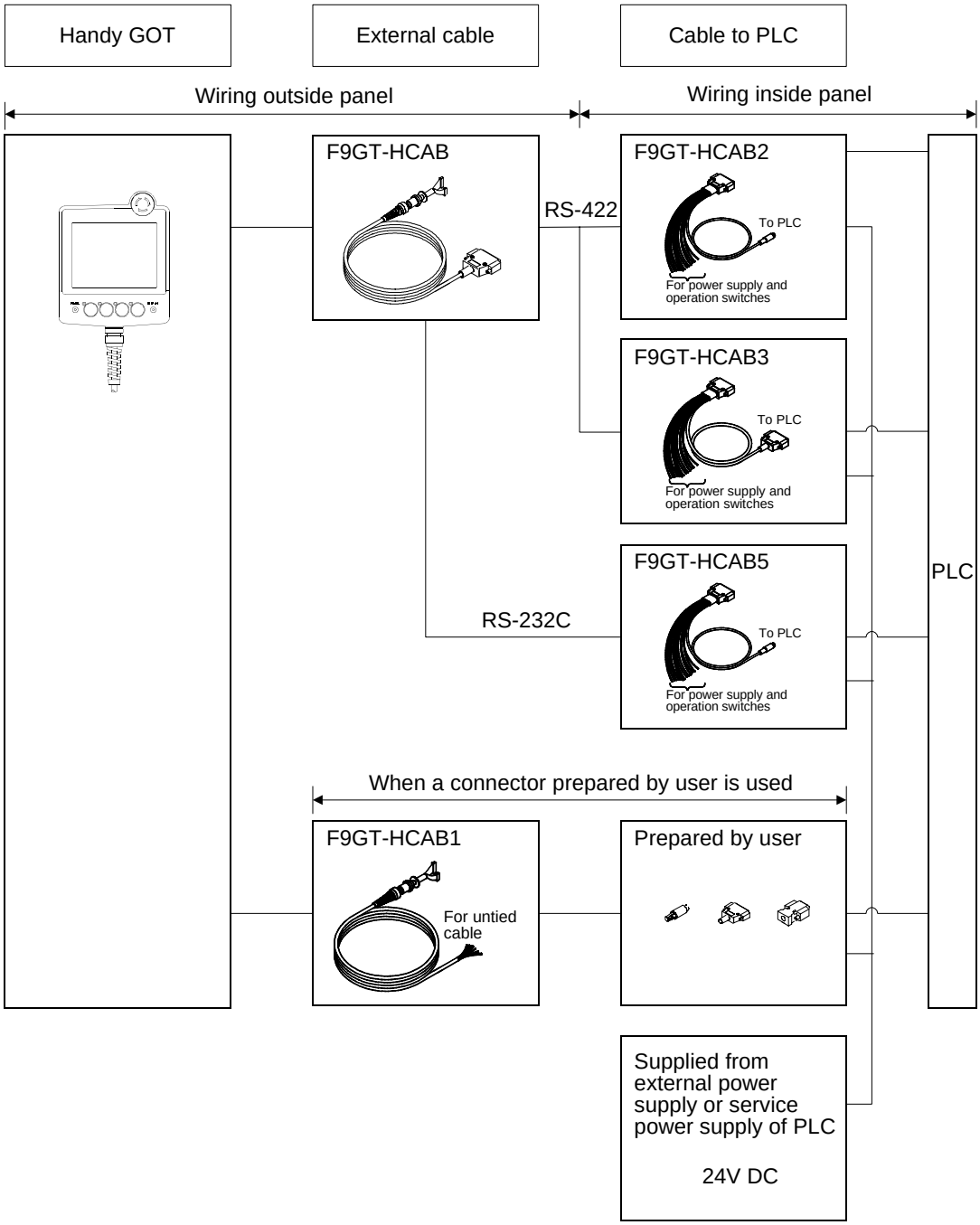
| Item name | Description | Reference |
|---|---|---|
| Connection Diagram of Handy GOT Operation Switches and Power Supply | You can confirm connection to confirm continuity of relay cables, etc. | 5.15 |
| Cable Specifications (Option) | You can confirm wiring of the cables dedicated to Handy GOT. | 5.16 |

## 5.1 Outline of Connection

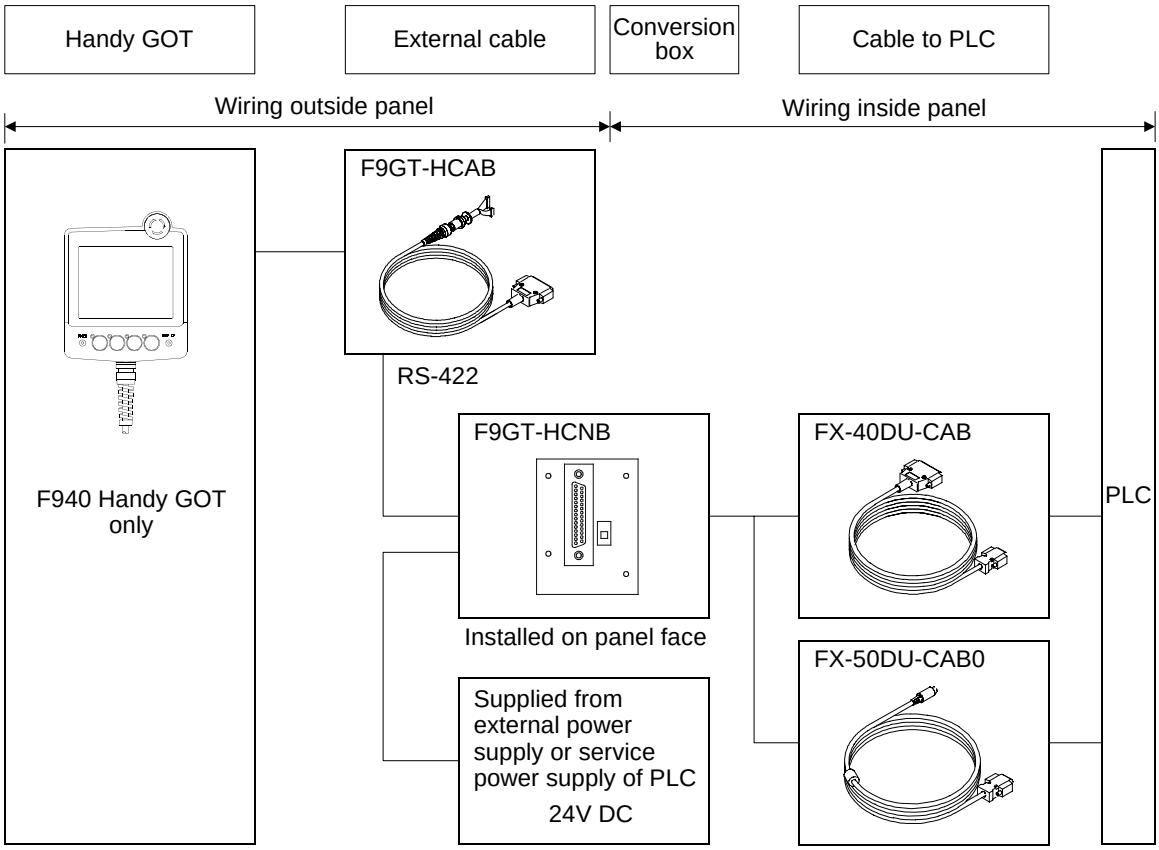
This section explains the outline of connection of the Handy GOT which is attached and removed or directly wired.

### 5.1.1 Handy GOT (Excluding RH model)

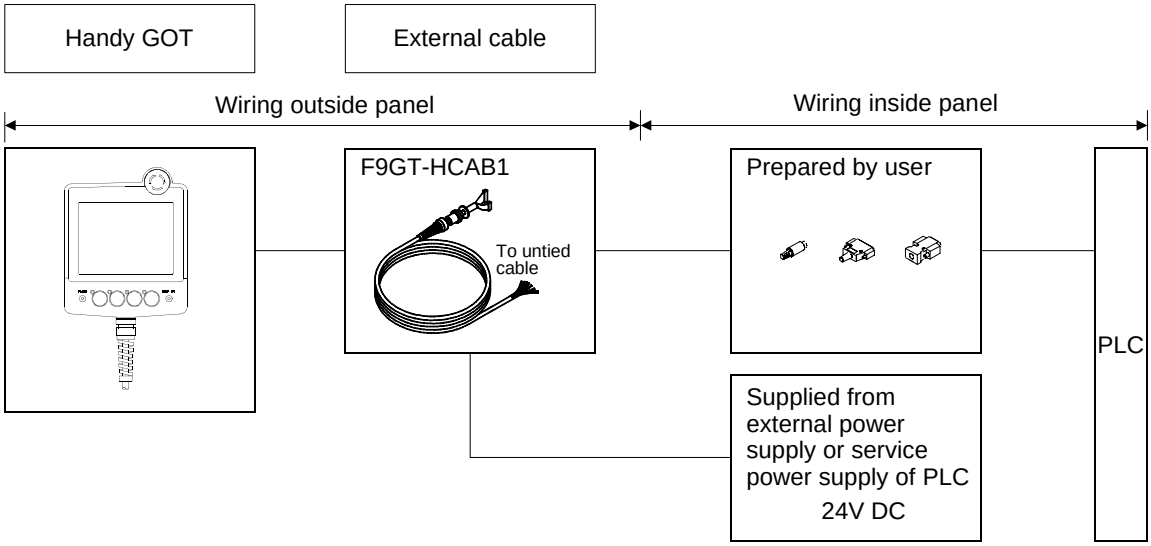
**When Handy GOT is attached and removed (using only external cables)**



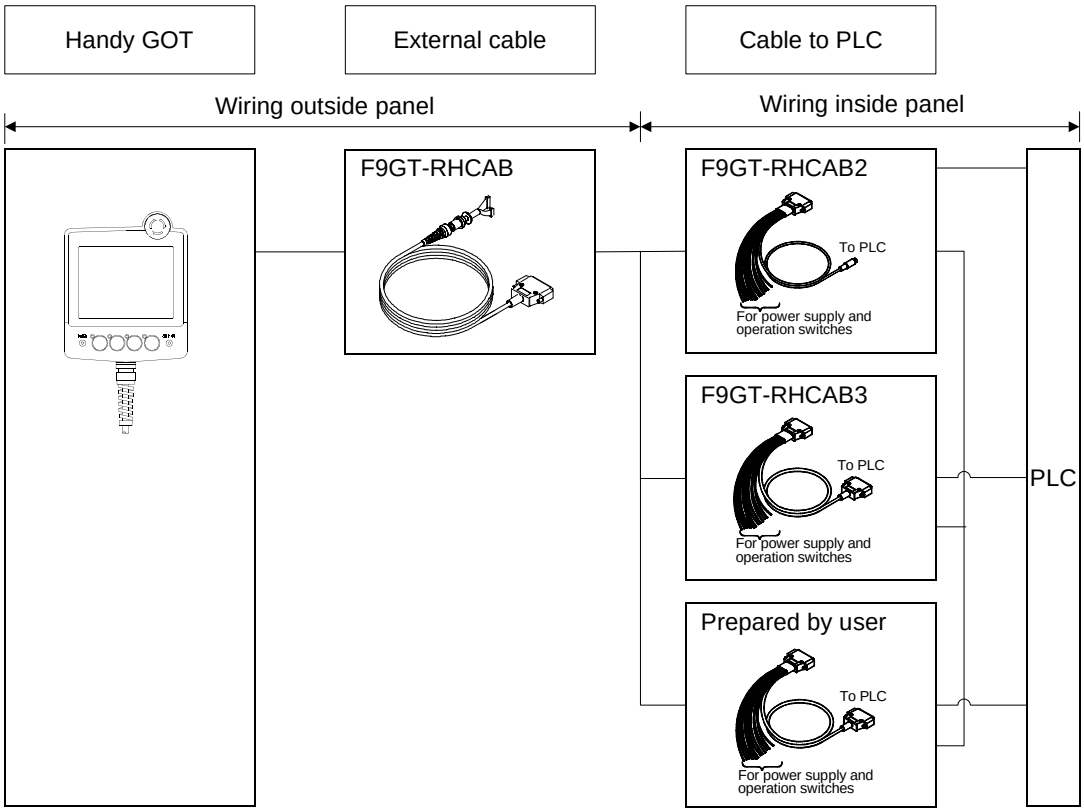
**When Handy GOT is attached and removed (using F9GT-HCNB)**




**When Handy GOT is directly wired**



### 5.1.2 Handy GOT (RH model)



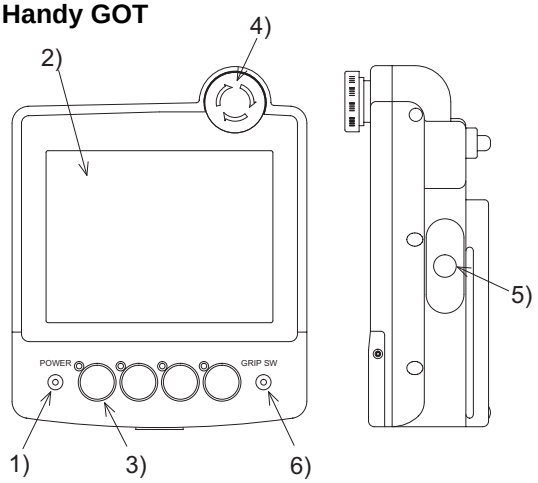
## 5.2 Name of Each Part

This section explains roughly the name and the function of each part of the Handy GOT.

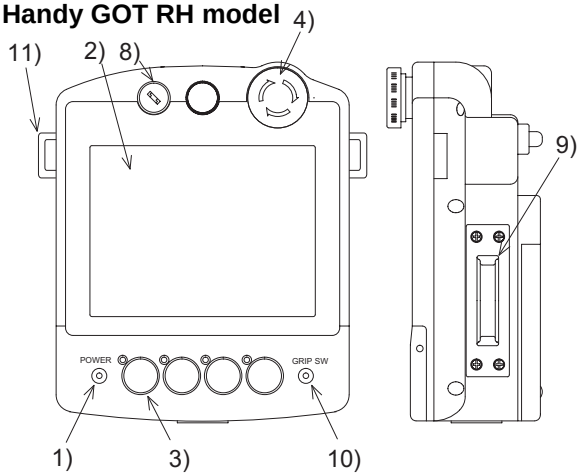
### 5.2.1 Front Panel

The name and the function of each part on the front panel of the Handy GOT are shown below.

**Handy GOT**




**Handy GOT RH model**



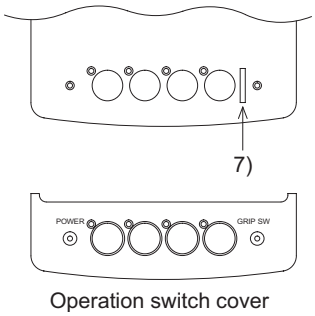

**1) POWER LED**

Lit while the DC power is supplied to the Handy GOT.

**2) Touch key LCD unit**

Consists of LC elements with touch keys. There are two types, 8-color and black-and-white.
Display size: 320 × 240 dots
Effective display size: 115(4.53") W × 86(3.39") H mm
* For the detailed functions, refer to the GOT-F900 SERIES OPERATION MANUAL.

When operation switch cover is removed




Operation switch cover

**3) Operation switches (4 switches)**

Direct connection to inputs in the PLC.
The name of these operation switches can be personalized using a name sheet offered as accessories.
Each switch is equipped with a green LED which indicates its status. The green LED lighting command is transferred between the PLC through serial communication.
The display control can be set freely using programs in the PLC.

**4) Emergency stop switch**

Independent contact, 24V DC specification.

**5) Grip switch**

While the grip switch is being pressed, manipulation of the touch keys on the screen is effective.

**6) GRIP SW LED**

While the grip switch is being pressed, manipulation of the touch keys on the screen is effective.

**7) Name sheet insertion slot**

Can be seen when the operation switch cover is removed from the lower portion of the Handy GOT.

**8) Keylock switch**

2-positioned switch. A key can be inserted or removed to lock the switch position.

**9) Grip switch**

The 3-positioned operation switch (OFF/ON/OFF) turns ON when pressed halfway and turns OFF when pressed all the way or when released.

**10) Grip switch LED**

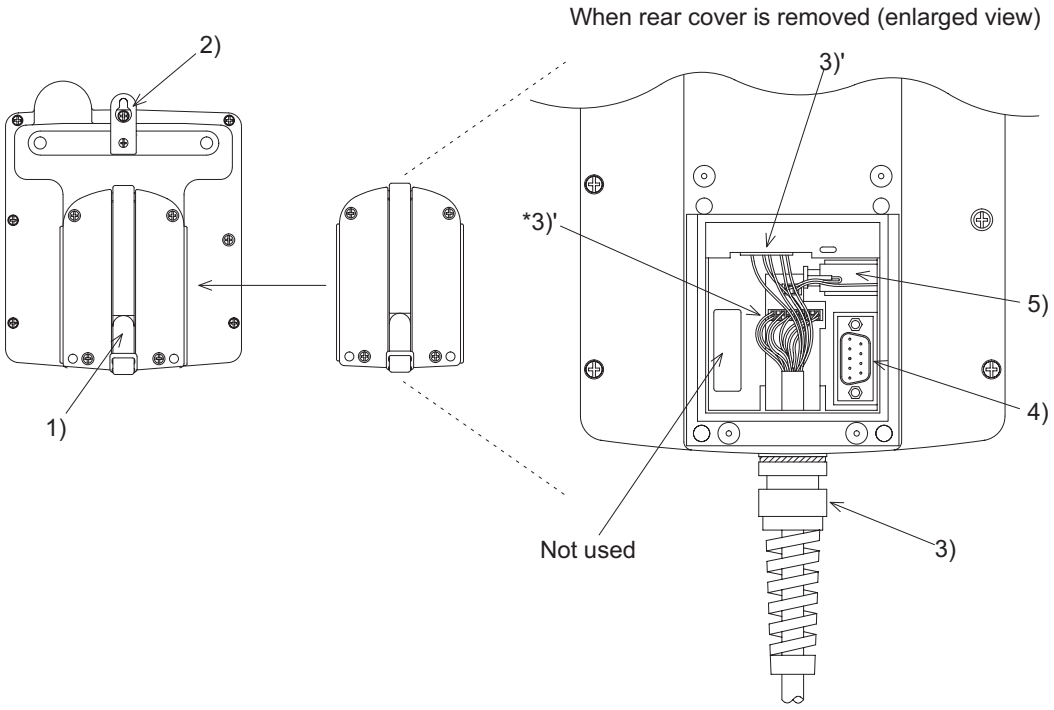
LED for confirming ON/OFF status of the grip switch. The parameters for controlling the LED can be set in the screen creation software and PLC program.

**11) Strap holders**

Loops for the strap

### 5.2.2 Rear Panel and Connectors

The name and the function of each part on the rear panel of the Handy GOT are shown below. When the rear cover is removed, diversified connectors can be seen.




**1) Hand strap**

Helps the user to hold the Handy GOT. The length of the strap can be adjusted.

**2) Metal hook for wall hanging**

Offered to mount the Handy GOT on a wall for operation or accommodation.

**3) External cable (option)**

Offered to connects a PLC, power supply or operation switch to ports outlined in 3)'.

* The port 3)' are provided for RS-422 or RS-232C communication depending on the product as shown in the table below.

| Model name | Signal |
|---|---|
| F940GOT-SBD-H-E, F940GOT-SBD-RH-E<br>F940GOT-LBD-H-E, F940GOT-LBD-RH-E | RS-422 |
| F943GOT-SBD-H-E, F943GOT-SBD-RH-E<br>F943GOT-LBD-H-E, F943GOT-LBD-RH-E | RS-232C |

**4) Personal computer port (RS-232C) 9-pin D-Sub, male**

Offered to transfer the screen data created using the screen creation software or to use the two-port interface function.

**5) Battery**

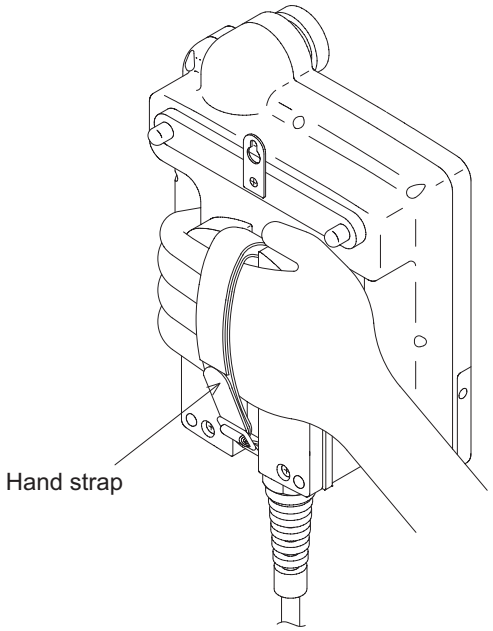
FX2NC-32BL is built into back up data.

## 5.3 Installation

This section explains installation of the Handy GOT.
Understand the specifications sufficiently, then install the Handy GOT.

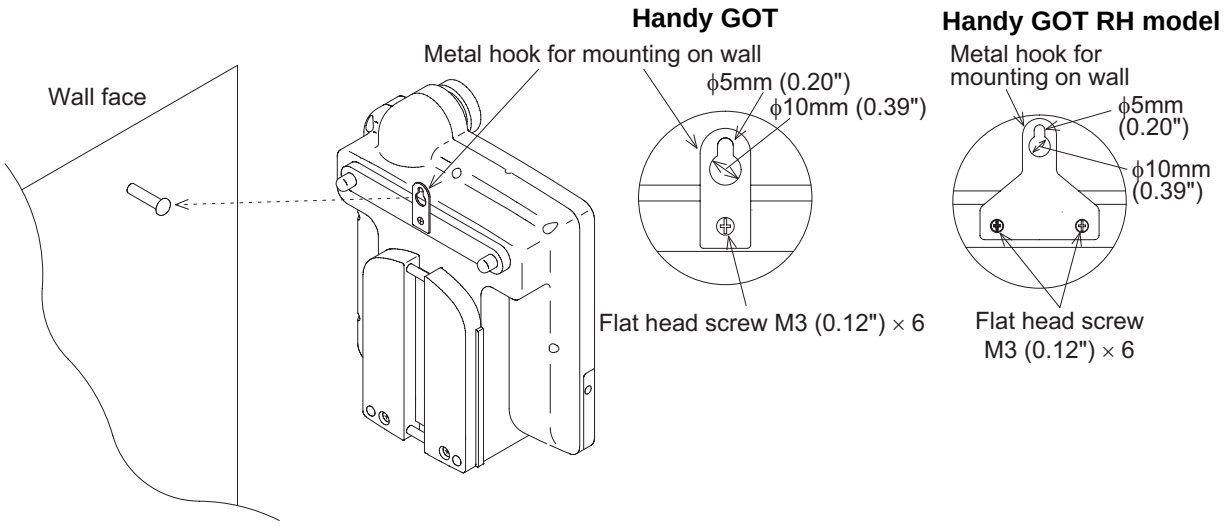
### 5.3.1 Holding

When holding the Handy GOT for operation, place your hand through the hand strap provided on its rear face. You can adjust the length of the hand strap.




### 5.3.2 Hanging on Wall

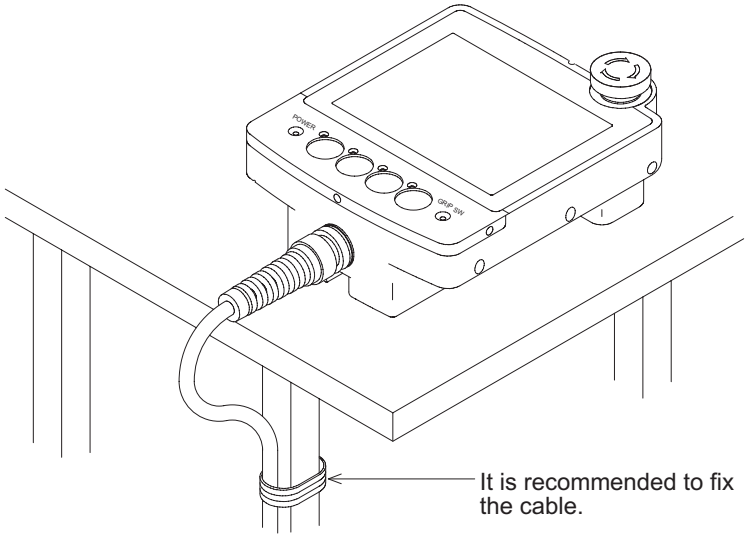
When operating the Handy GOT while keeping it hung on the wall, use the metal fixture for wall hanging provided on the rear face of the Handy GOT.




On the wall face, the weight of the main unit (approximately 0.79 kg/1.74 lbs, RH model 0.87 kg/1.91 lbs) and a load of approximately 1 ~ 3 kg (2.20 ~ 6.61 lbs) which varies depending on the communication cable length are applied. While taking this into consideration, attach a suitable metal fixture on the wall.

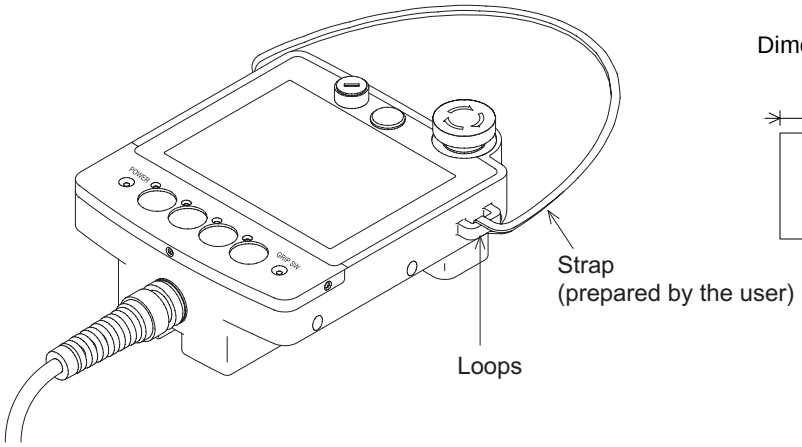
### 5.3.3 Flat Surface Mounting

When using the Handy GOT on a flat surface, such as a desk or shelf, keep the Handy GOT parallel to the surface so that it does not drop and, fix the communication cable to the desk.

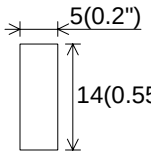



### 5.3.4 Installation of Strap for Drop Prevention (RH model only)

A strap to help prevent accidental drops or for shoulder/hand carry (prepared by the user) can be attached to the loops.




Dimension of the loop



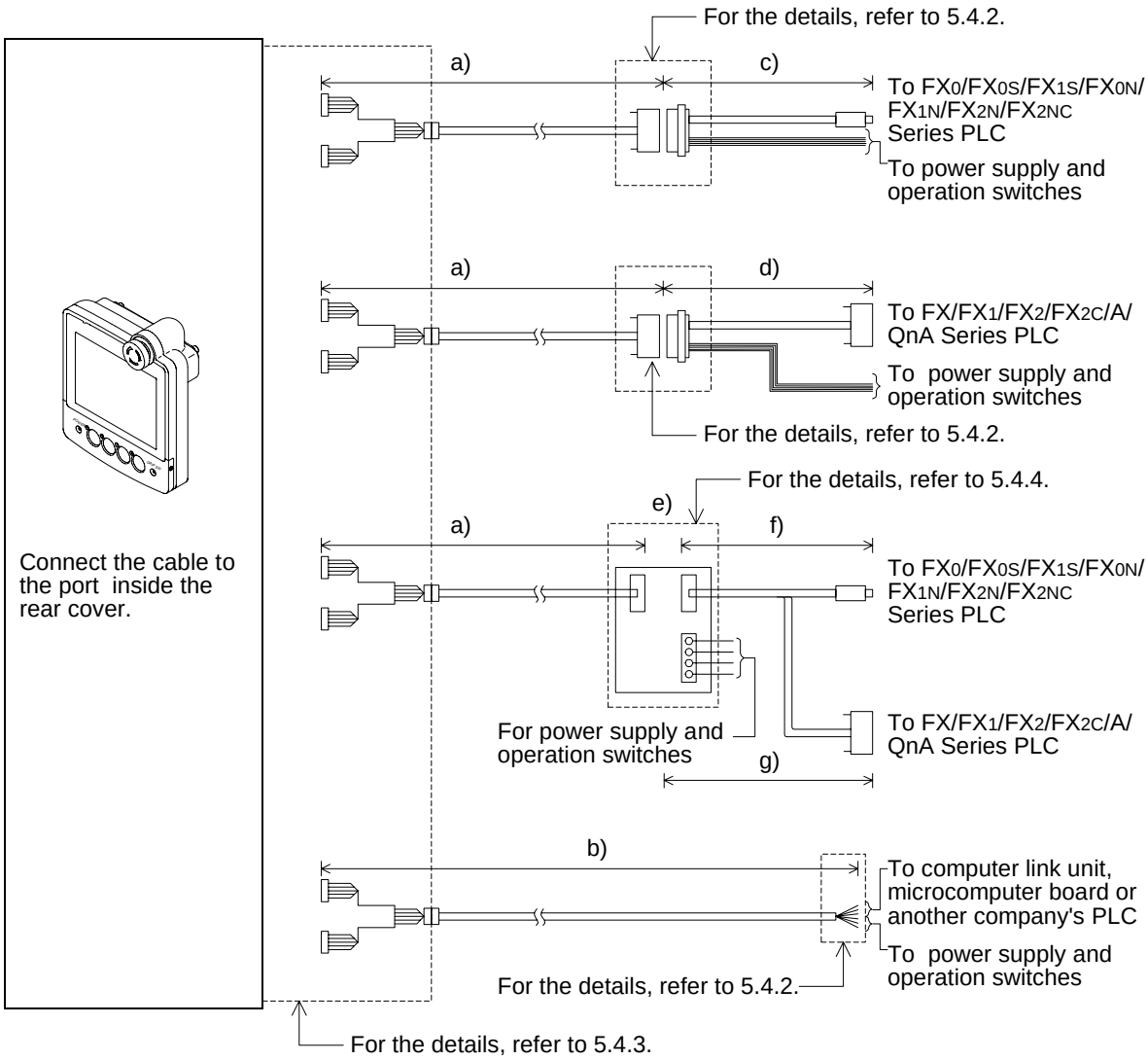

Dimensions: mm(inches)

## 5.4 Selection and Installation of External Cable

A cable combined for the PLC varies among the F940/F930 Handy GOT RH model and other models. Select a suitable cable in reference to the figures below.

### 5.4.1 Handy GOT (Excluding RH model)

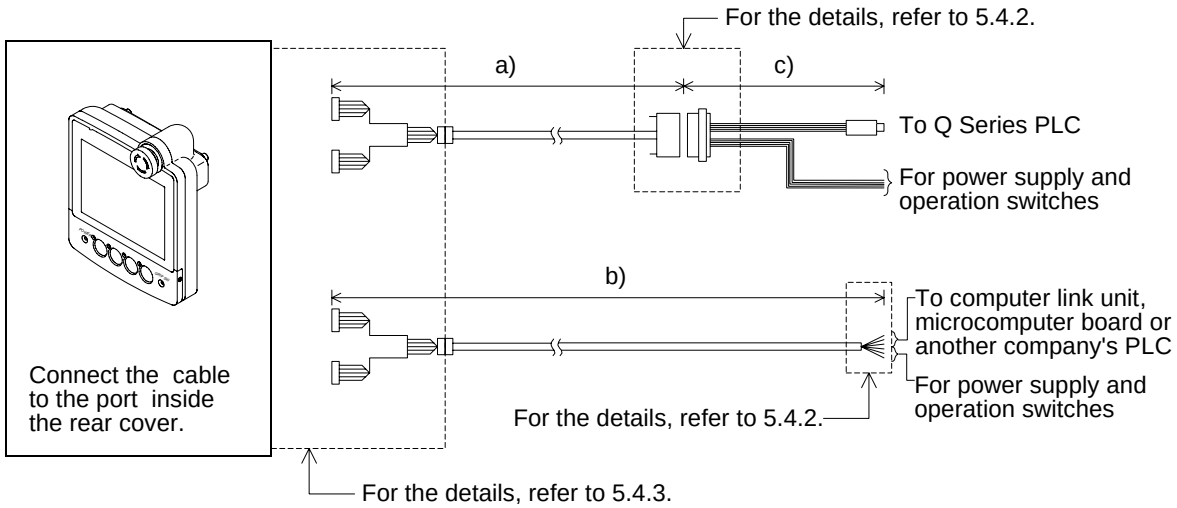
**1) F940 Handy GOT**


For the details, refer to 5.4.2.
a)
c)
To FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC Series PLC
To power supply and operation switches
a)
d)
To FX/FX1/FX2/FX2C/A/QnA Series PLC
To power supply and operation switches
For the details, refer to 5.4.2.
For the details, refer to 5.4.4.
e)
a)
f)
To FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC Series PLC
For power supply and operation switches
To FX/FX1/FX2/FX2C/A/QnA Series PLC
g)
b)
To computer link unit, microcomputer board or another company's PLC
To power supply and operation switches
For the details, refer to 5.4.2.
Connect the cable to the port inside the rear cover.
For the details, refer to 5.4.3.

In connection through RS-422, the connection distance between the Handy GOT and the PLC should be 11.5 m (37' 9") maximum.

| Name | Model name | Remarks |
|---|---|---|
| a) External cable (one side: 25-pin D-Sub) | F9GT-HCAB-3M(3m, 9' 10")<br>F9GT-HCAB-10M(10m, 32' 10") | |
| b) External cable (one side: Untied 20-core wires) | F9GT-HCAB1-3M(3m, 9' 10")<br>F9GT-HCAB1-10M(10m, 32' 10") | |
| c) Relay cable for PLC connection (PLC side: 8-pin MINI DIN) | F9GT-HCAB2-150(1.5m, 4' 11") | |
| d) Relay cable for PLC connection (PLC side: 25-pin D-Sub) | F9GT-HCAB3-150(1.5m, 4' 11") | |
| e) Connector conversion box | F9GT-HCNB | |
| f) PLC connection cable (PLC side: 8-pin MINI DIN) | FX-50DU-CAB0(3m, 9' 10")<br>FX-50DU-CAB0-1M(1m, 3' 3") | |
| g) PLC connection cable (PLC side: 25-pin D-Sub) | FX-40DU-CAB(3m, 9' 10") | |

### 2) F943 Handy GOT


For the details, refer to 5.4.2.
a)
c)
To Q Series PLC
For power supply and operation switches
b)
To computer link unit, microcomputer board or another company's PLC
For power supply and operation switches
For the details, refer to 5.4.2.
Connect the cable to the port inside the rear cover.
For the details, refer to 5.4.3.

When connecting via RS-232C ports, make sure that the distance between the Handy GOT and PLC is 6m (19' 8") or less.

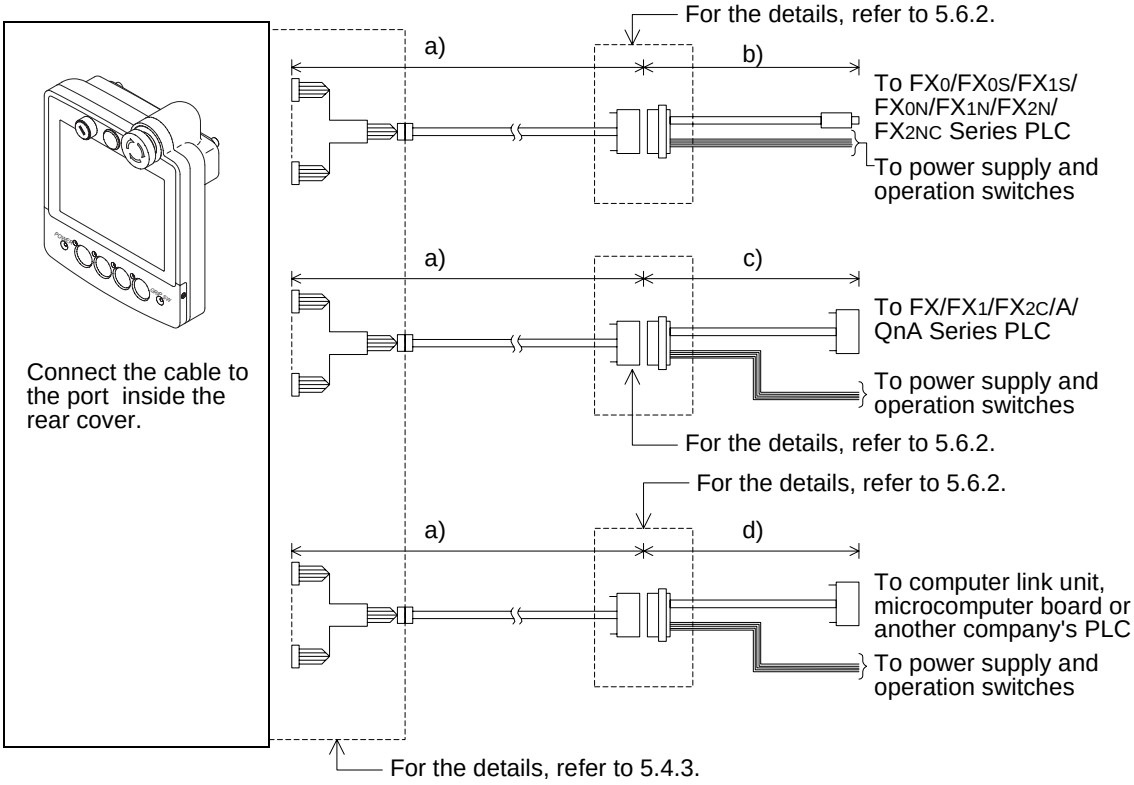
| Name | Model name | Remarks |
|---|---|---|
| a) External cable (one side: 25-pin D-Sub) | F9GT-HCAB-3M(3m, 9' 10") | |
| b) External cable (one side: Untied 20-core wires) | F9GT-HCAB1-3M(3m, 9' 10") | |
| c) Relay cable for PLC connection (PLC side: 6-pin MINI DIN) | F9GT-HCAB5-150(1.5m, 4' 11") | Prepared by the user except for the cable for QCPU connection. |

Reference:
The length of some external cables is different from the value above (3m, 9' 10"). When using such cables, cut them properly so that the maximum allowable connection distance is satisfied.

b) F9GT-HCAB1-□□M
10 = 10m (32' 10")

## 5.4.2 Wiring between Handy GOT (RH model) operation switches and connected equipment

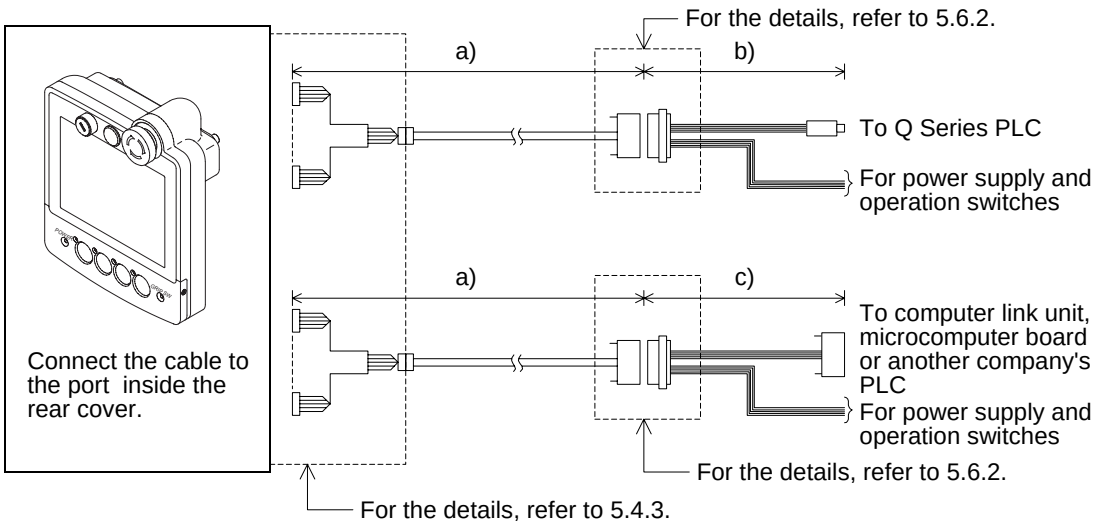
### 1) F940 Handy GOT


For the details, refer to 5.6.2.
a)
b)
To FX0/FX0S/FX1S/ FX0N/FX1N/FX2N/ FX2NC Series PLC
To power supply and operation switches
a)
c)
To FX/FX1/FX2C/A/ QnA Series PLC
To power supply and operation switches
For the details, refer to 5.6.2.
For the details, refer to 5.6.2.
a)
d)
To computer link unit, microcomputer board or another company's PLC
To power supply and operation switches
Connect the cable to the port inside the rear cover.
For the details, refer to 5.4.3.

When connecting via RS-232C ports, make sure that the distance between the Handy GOT and PLC is 11.5m (37' 9") or less.

| Name | Model name | Remarks |
|---|---|---|
| a) External cable (one side: 37-pin D-Sub) | F9GT-RHCAB-3M(3m, 9' 10")<br>F9GT-RHCAB-6M(6m, 19' 8")<br>F9GT-RHCAB-10M(10m, 32' 10") | |
| b) Relay cable for PLC connection (PLC side: 8-pin MINI DIN) | F9GT-RHCAB2-150(1.5m, 4' 11") | |
| c) Relay cable for PLC connection (PLC side: 25-pin D-Sub) | F9GT-RHCAB3-150(1.5m, 4' 11") | |
| d) Relay cable for PLC connection | Prepared by user | |

### 2) F943 Handy GOT

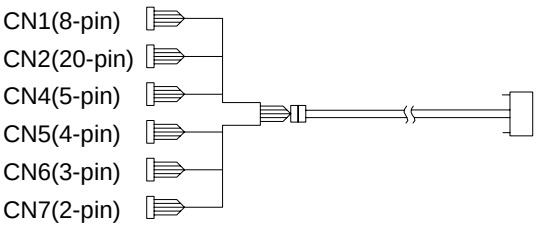

For the details, refer to 5.6.2.
a)
b)
To Q Series PLC
For power supply and operation switches
a)
c)
To computer link unit, microcomputer board or another company's PLC
For power supply and operation switches
For the details, refer to 5.6.2.
Connect the cable to the port inside the rear cover.
For the details, refer to 5.4.3.

When connecting via RS-232C ports, make sure that the distance between the Handy GOT and PLC is 6m (19' 8") or less.

| Name | Model name | Remarks |
|---|---|---|
| a) External cable (one side: 25-pin D-Sub) | F9GT-RHCAB-3M(3m, 9' 10") | |
| b) Relay cable for PLC connection (PLC side: 6-pin MINI DIN) | F9GT-RHCAB5-150(1.5m, 4' 11") | Cable for any other equipment other than Q Series PLC should be prepared by user. |
| c) Relay cable for PLC connection | Prepared by user | |

Reference:
The length of some external cables is different from the value above (3m, 9' 10"). When using such cables, cut them properly so that the maximum allowable connection distance is satisfied.

a) F9GT-RHCAB-□□M
3 = 3m (9' 10"), 6 = 6m (19' 8"), 10 = 10m (32' 10")



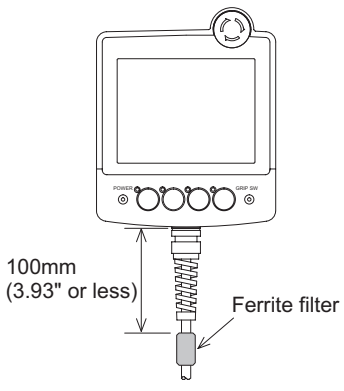

CN1:For power supply
CN2:For communication
CN4:For grip switch
CN5:For emergency stop switch
CN6:For keylock switch
CN7:Not to be wired

**Note:**

The connection distance between the Handy GOT and the PLC ("a) + c)" or "b)") should be within 6m (19' 8").

**Caution for CE EMC:**

For compliance to CE EMC regulations it is necessary to add a ferrite filter on the external cable for F943GOT-SBD-H-E or F943GOT-LBD-H-E.
The filter should be attached as shown right with the filter surrounding the external cable.
The recommended ferrite filter is the TDK ZCAT2035-0930A-BK or equivalent.

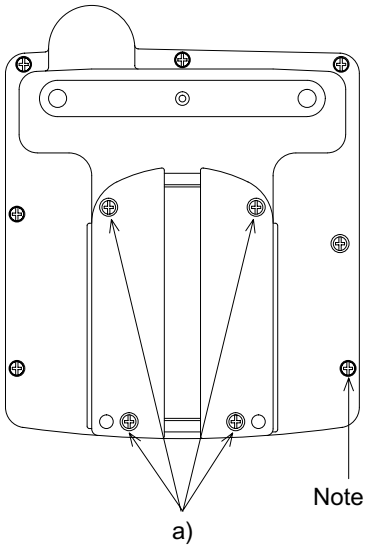


### 5.4.3 Installation of External Cable

This section explains the procedure to install an optional external cable to the Handy GOT.

**1) Remove rear cover**

Rear face of Handy GOT



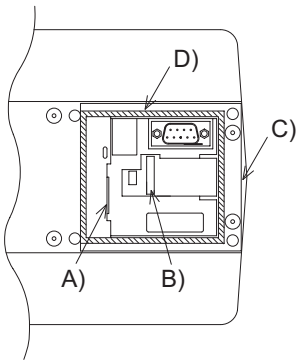

Remove four mounting screws "a)", and open the rear cover.
Installation screw M3(0.12") × 8

**Note:**

Never remove any screw (among seven screws located around the rear face of the Handy GOT) other than the mounting screws "a)". If such a screw is removed, the waterproof ability may deteriorate or failure may occur.

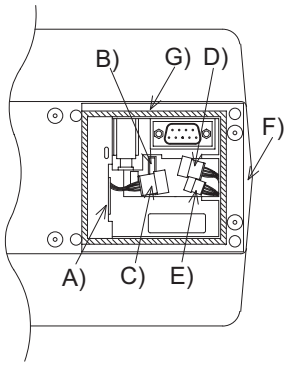
When rear cover is open

**Handy GOT**




A) Power supply connector (8 pins)
B) Connector for communication and operation switches (20 pins)
C) Installation hole
D) Packing

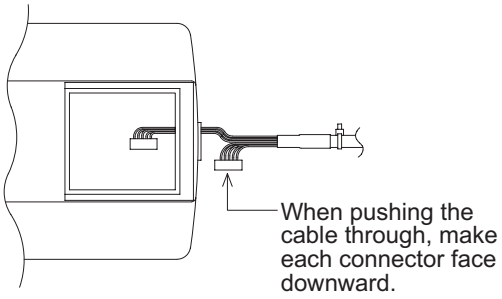
**Handy GOT RH model**



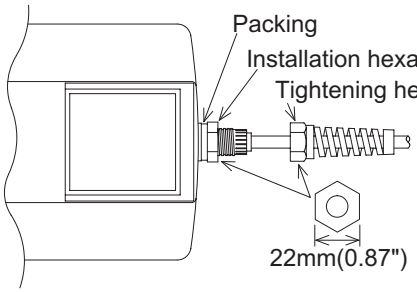

A) Power supply connector (CN1: 8 pins)
B) Connector for communication and operation switches (CN2: 20 pins)
C) Connector for grip switch (CN4: 5 pins)
D) Connector for emergency stop (CN5: 4 pins)
E) Installation hole (CN6: 3 pins)
F) Installation hole
G) Packing

**2) Connect an external cable**

a) Insert an external cable into the installation hole C) of the main unit, and connect it to the ports A) and B).

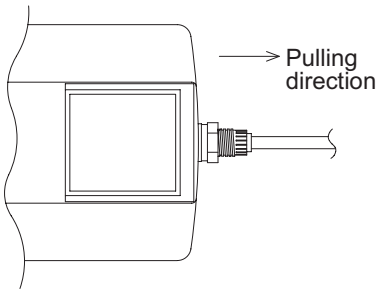


b) Tighten the hexagon nut.

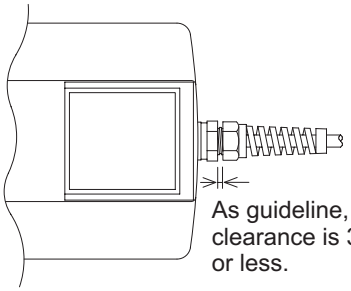



Make sure to tighten the hexagon nut for cable mounting with a sufficient force to avoid looseness. As guideline, tighten it until the packing is crushed by 0.5 mm (0.02") or more.

c) Pull lightly on the cable until it naturally stops.




d) Securely tighten the hexagon nut for cable sewring so that the cable will not come out or the waterproof ability will not be deteriorated.




**3) Attach rear cover**

a) Before closing the rear cover, make sure that the packing D) has not come off.

b) Attach the rear cover.

c) Tighten four mounting screws.
Make sure the tightening torque is 0.49 to 0.68 N•m.

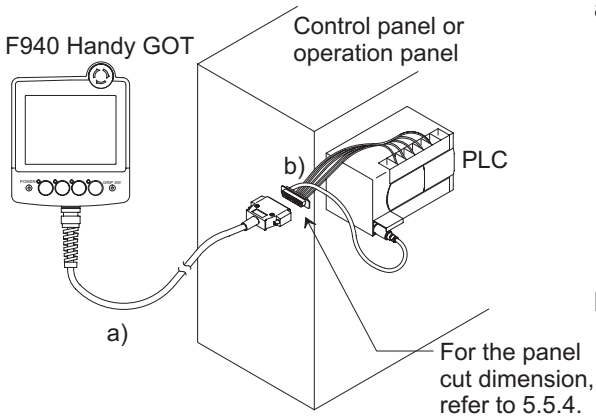
## 5.5 Processing Panel Face of Control Box or Cabinet

This section explains the panel processing procedure required when a connector is provided and the Handy GOT is attached or removed after a connector is provided to it.

### 5.5.1 Selection of relay cable

**1) Using F940 Handy GOT**

a) Installing a connector on the panel of control box or cabinet.



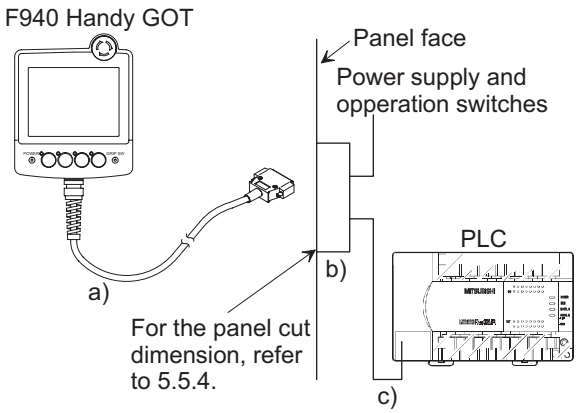

a) External cable
(with 25-pin D-Sub, male connector)
Other than RH model
F9GT-HCAB-3M(3m, 9' 10")
F9GT-HCAB-10M(10m, 32' 10")
RH model
F9GT-RHCAB-3M(3m, 9' 10")
F9GT-RHCAB-6M(6m, 19' 8")
F9GT-RHCAB-10M(10m, 32' 10")

b) Relay cable for connection to PLC
(Refer to 5.4.2.)
25-pin D-Sub or 8-pin MINI DIN connector is offered to connect to FX CPU. Choose a proper cable between the following.

For FX CPU (FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC)
Other than RH model
F9GT-HCAB2-150(1.5m, 4' 11")
RH model
F9GT-RHCAB2-150(1.5m, 4' 11")

For A/QnA/FX CPU (FX/FX1/FX2/FX2C)
Other than RH model
F9GT-HCAB3-150(1.5m, 4' 11")
RH model
F9GT-RHCAB3-150(1.5m, 4' 11")
Any relay cable other than the above should be prepared by the user.

b) Installing the F9GT-HCAB conversion box on the panel (RH model cannot be connected.)




a) External cable
(with 25-pin D-Sub pin connector)
F9GT-HCAB-3M(3m, 9' 10")
F9GT-HCAB-10M(10m, 32' 10")

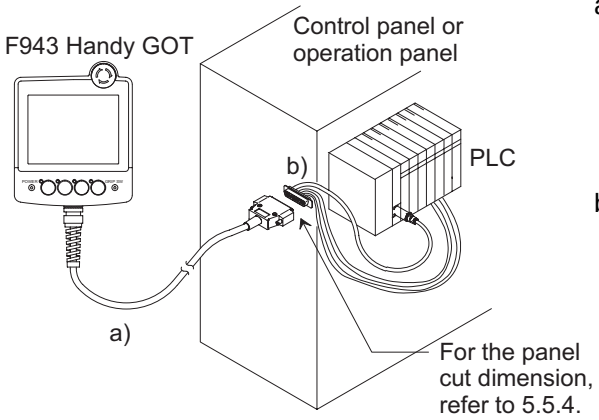
b) F9GT-HCNB conversion box

c) Communication cable for connection to PLC
25-pin D-Sub or 8-pin MINI DIN connector is offered to connect to FX CPU.
For A/QnA/FX CPU (FX/FX1/FX2/FX2C)
FX-40DU-CAB(3m, 9' 10")

For FX CPU (FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC)
FX-50DU-CAB0(3m, 9' 10")
FX-50DU-CAB0-1M(1m, 3' 3")

**2) Using F943 Handy GOT**

a) Installing a connection on the panel of control box or cabinet




a) External cable
(with 25-pin D-Sub, male connector)
Other than RH model
F9GT-HCAB-3M(3m, 9' 10")
RH model
F9GT-RHCAB-3M(3m, 9' 10")

b) Relay cable for connection to Q Series PLC
Other than RH model
F9GT-HCAB5-150(1.5m, 4' 11")
RH model
F9GT-RHCAB5-150(1.5m, 4' 11")
A relay cable for any series other than the Q Series should be prepared by the user.

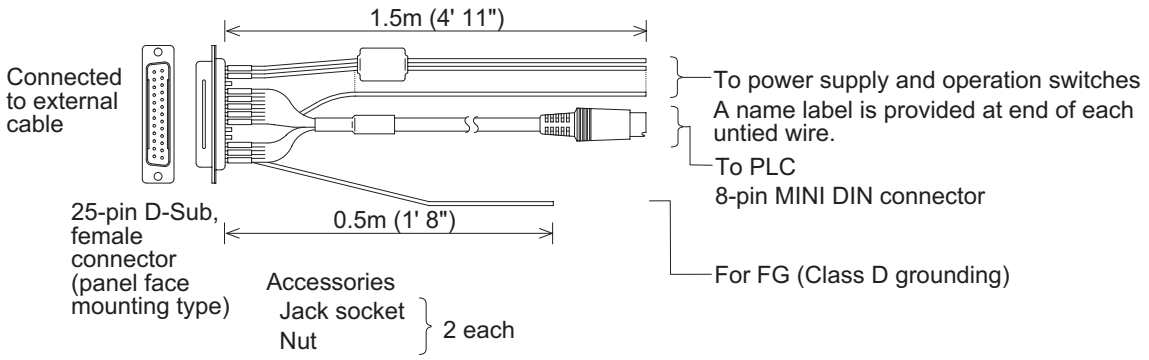
F9GT-HCAB1-□□M external cable untied should be used when the user chooses a specific connector for the F943 Handy GOT (excluding RH model) according to the specifications of equipment.

### 5.5.2 Appearance shape of Relay Cable

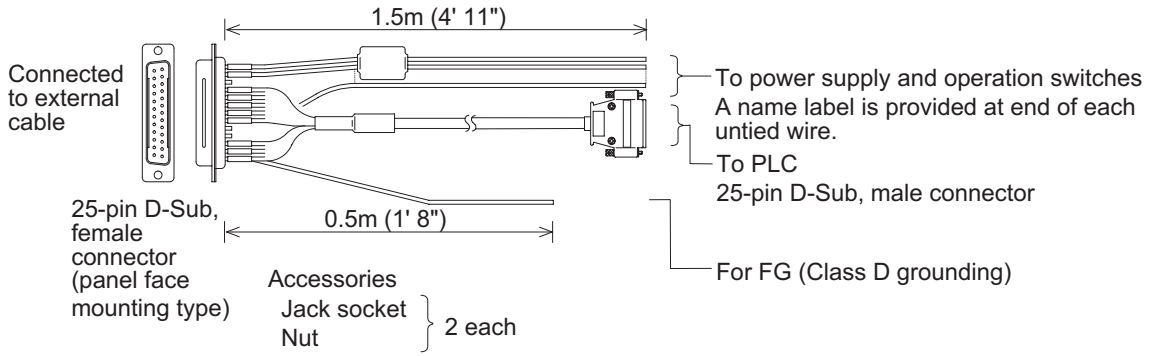
The panel cut dimension on the panel face is as shown in section 5.5.4.

**Handy GOT (Excluding RH model)**

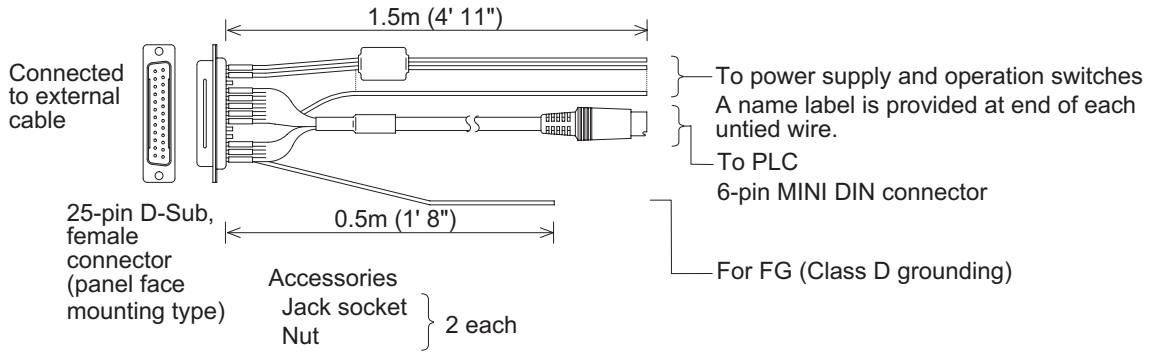
**1) F9GT-HCAB2-150 relay cable for FX Series (FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC) PLC**


1.5m (4' 11")
Connected to external cable
To power supply and operation switches
A name label is provided at end of each untied wire.
To PLC
8-pin MINI DIN connector
25-pin D-Sub, female connector (panel face mounting type)
0.5m (1' 8")
For FG (Class D grounding)
Accessories
Jack socket
Nut
2 each

**2) F9GT-HCAB3-150 relay cable for FX (FX1/FX2/FX2C), A, QnA Series PLC**

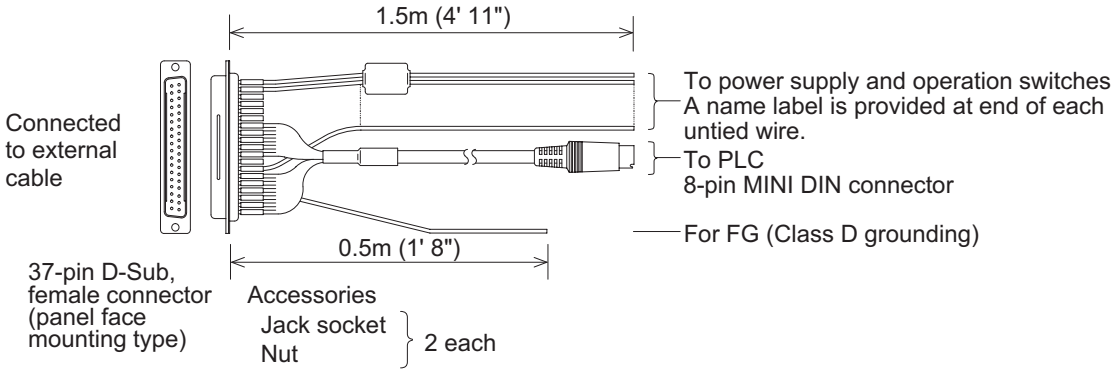

1.5m (4' 11")
Connected to external cable
To power supply and operation switches
A name label is provided at end of each untied wire.
To PLC
25-pin D-Sub, male connector
25-pin D-Sub, female connector (panel face mounting type)
0.5m (1' 8")
For FG (Class D grounding)
Accessories
Jack socket
Nut
2 each

**3) F9GT-HCAB5-150 relay cable for Q Series PLC**

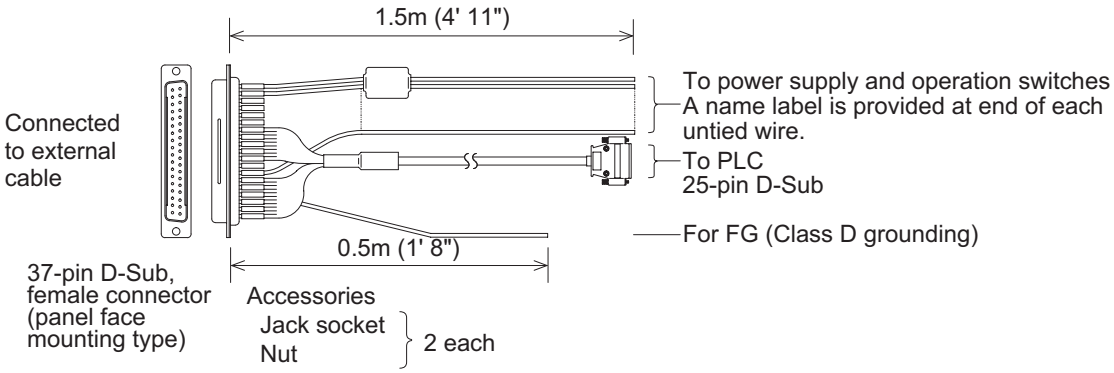

1.5m (4' 11")
Connected to external cable
To power supply and operation switches
A name label is provided at end of each untied wire.
To PLC
6-pin MINI DIN connector
25-pin D-Sub, female connector (panel face mounting type)
0.5m (1' 8")
For FG (Class D grounding)
Accessories
Jack socket
Nut
2 each

### Handy GOT (RH model)

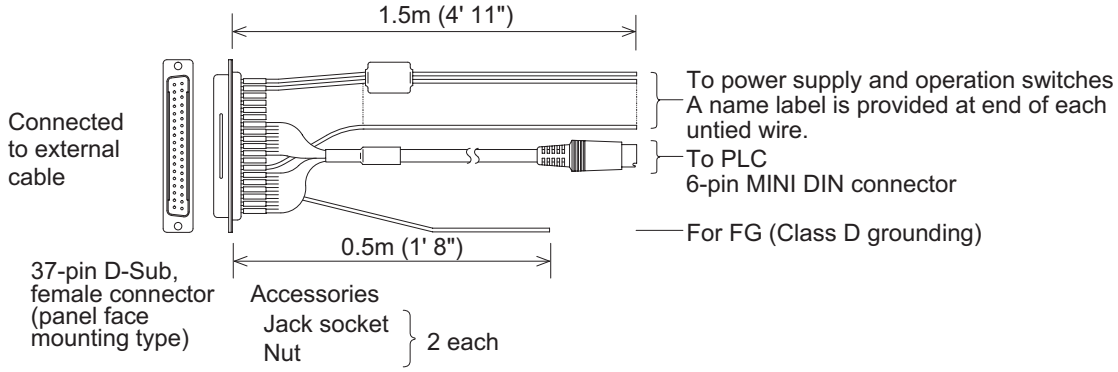
#### 1) F9GT-RHCAB2-150 relay cable for FX Series (FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC) PLC


1.5m (4' 11")
Connected to external cable
To power supply and operation switches
A name label is provided at end of each untied wire.
To PLC
8-pin MINI DIN connector
For FG (Class D grounding)
0.5m (1' 8")
37-pin D-Sub, female connector (panel face mounting type)
Accessories
Jack socket
Nut
2 each

#### 2) F9GT-RHCAB3-150 relay cable for FX (FX1/FX2/FX2C), A, QnA Series PLC

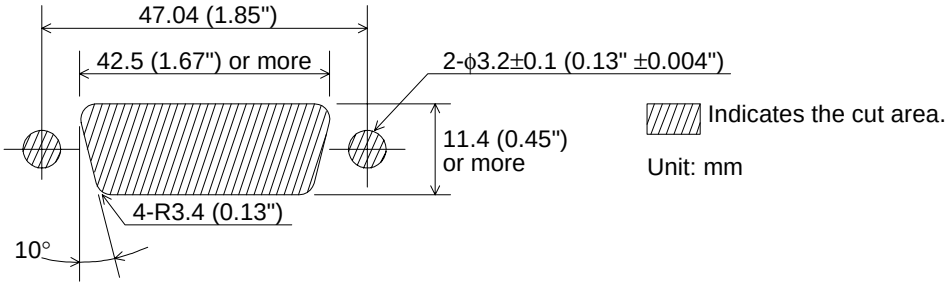



#### 3) F9GT-RHCAB5-150 relay cable for Q Series PLC


1.5m (4' 11")
Connected to external cable
To power supply and operation switches
A name label is provided at end of each untied wire.
To PLC
6-pin MINI DIN connector
For FG (Class D grounding)
0.5m (1' 8")
37-pin D-Sub, female connector (panel face mounting type)
Accessories
Jack socket
Nut
2 each

### 5.5.3 Panel Cut Dimension for Relay Cable

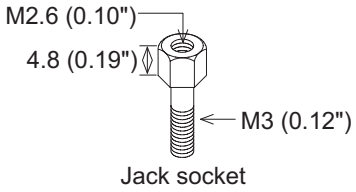
When mounting the relay cable connector on the panel of a control box or cabinet, prepare panel of control box or cabinet as follows.

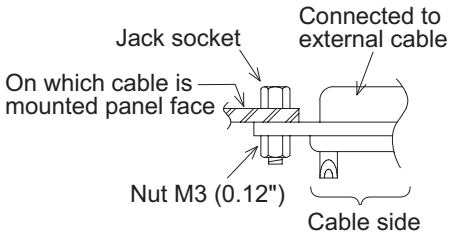



(Panel thickness: 0.8 to 1.3mm, 0.03" to 0.05")

| | Handy GOT | Handy GOT RH model |
|---|---|---|
| Connector shape | 25-pin D-Sub | 37-pin D-Sub |
| Cable model name | F9GT-HCAB2-150<br>F9GT-HCAB3-150<br>F9GT-HCAB5-150 | F9GT-RHCAB2-150<br>F9GT-RHCAB3-150<br>F9GT-RHCAB5-150 |

Insert jack sockets into the holes shown above, and tighten them with nuts M3 (0.12").




### 5.5.4 Panel Cut Dimension for F9GT-HCNB

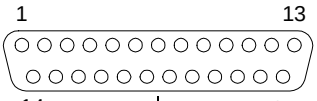
The F9GT-HCNB can be mounted on the panel face directly or mounted using an L-shape metal fixture.

**For the details of the panel cut dimension, refer to the F9GT-HCNB CONVERSION BOX HARDWARE MANUAL (JY992D88901) which is included with the F9GT-HCNB.**

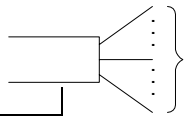
## 5.6 Pin Layout and Signal Allocation of Connector for Serial Communication and Operation Switches

### 5.6.1 F9GT-HCAB□-□M/F9GT-HCAB1-□M External Cable

F9GT-HCAB-□M
25-pin D-Sub, male connector



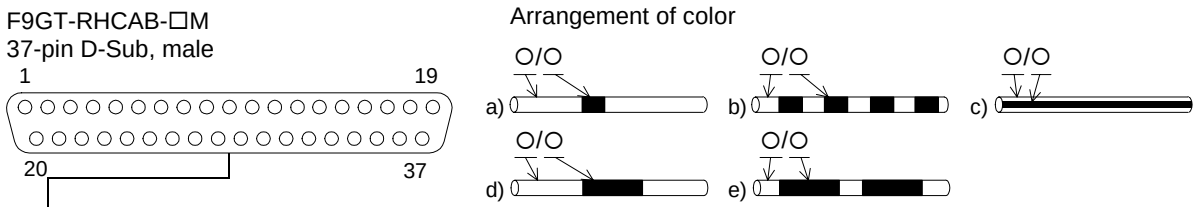

F9GT-HCAB1-□M
Untied wires (20-core type)




| External cable | | Communication/power supply/ operation switch signal name | | Description | Reference |
|---|---|---|---|---|---|
| F9GT-HCAB-□M | F9GT-HCAB1-□M | F940 Handy GOT | F943 Handy GOT | | |
| D-Sub pin number | Untied wire color | RS-422 | RS-232C | | |
| 1 | Drain wire | FG (shield) | | Frame ground | – |
| 2 | Black | TXD+(SDA) | SD(TXD) | Signal wires for communication with PLC Corresponding section from chapter 8 | |
| 3 | White | TXD-(SDB) | ER(DTR) | | |
| 4 | Red | RTS+(RSA) | RD(RXD) | | |
| 5 | Green | RTS-(RSB) | DR(DSR) | | |
| 6 | Yellow | RXD+(RDA) | RS(RTS) | | |
| 7 | Brown | RXD-(RDB) | CS(CTS) | | |
| 8 | Blue | CTS+(CSA) | NC | | |
| 9 | Gray | CTS-(CSB) | NC | | |
| 10 | Orange | SG | | Signal ground | |
| 11 | – | NC | | Not used | |
| 12 | Purple | DC 24VG | | Minus side of the 24V DC power supply "-" of the main unit | 5.8 |
| 13 | Pink | | | | |
| 14 | Fresh green | SW-COM (common) | | Operation switches | 5.9 |
| 15 | Sky blue | SW1 | | | |
| 16 | Black/white | SW2 | | | |
| 17 | Red/white | SW3 | | | |
| 18 | Green/white | SW4 | | | |
| 19 | – | NC | | Not used | |
| 20 | – | NC | | | |
| 21 | Brown/white | ES1 | | Emergency stop switch (Both ends of the contact of the switch are present here.) | 5.10 |
| 22 | Yellow/white | ES1 | | | |
| 23 | – | NC | | Not used | |
| 24 | Blue/white | DC 24V + | | Plus side of the 24V DC power supply "+" of the main unit | 5.8 |
| 25 | Gray/white | | | | |

The grip switch is not in the table because there is no need of wiring.

### 5.6.2 F9GT-RHCAB-☐M External Cable



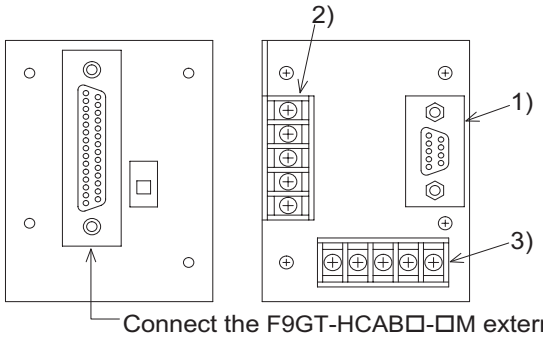

| External cable | | Communication/power supply/ operation switch signal name | | Description | Reference |
|---|---|---|---|---|---|
| F9GT-HCAB-☐M | F9GT-HCAB1-☐M | F940 Handy GOT | F943 Handy GOT | | |
| D-Sub pin number | Wire color | RS-422 | RS-232C | | |
| 1 | Shield | FG (shield) | | Frame ground | Corresponding chapters |
| 2 | Yellow/Blue | TXD+ (SDA) | SD (TXD) | Note 1 | |
| 3 | Yellow/Red | TXD- (SDB) | ER (DTR) | | |
| 4 | White/Blue | RTS+ (RSA) | RD (RXD) | | |
| 5 | White/Red | RTS- (RSB) | DR (DSR) | | |
| 6 | Gray/Blue | RXD+ (RDA) | RS (RTS) | | |
| 7 | Gray/Red | RXD- (RDB) | CS (CTS) | | |
| 8 | Orange/Blue | CTS+ (CSA) | NC | | |
| 9 | Orange/Red | CTS- (CSB) | NC | | |
| 10 | Orange/Red | SG | | Signal ground | |
| 11 | – | NC | | Not used | |
| 12 | White/Red | SW-COM | | Common for Operation swatches | 5.9 |
| 13 | Gray/Blue | SW1 | | Operation switches | |
| 14 | Gray/Red | SW2 | | | |
| 15 | Orange/Blue | SW3 | | | |
| 16 | Orange/Red | SW4 | | | |
| 17 | – | NC | | Not used | |
| 18 | Gray/Blue | DC24V G | | 24V DC power supply "-" | 5.8 |
| 19 | Gray/Red | | | | |
| 20 | Pink/Red | ES1-1 | | Emergency stop switch | 5.10 |
| 21 | Pink/Blue | ES1-1 | | | |
| 22 | Orange/Red | ES1-2 | | | |
| 23 | Orange/Blue | ES1-2 | | | |
| 24 | White/Red | DSW-1 | | Grip switch | 5.12 |
| 25 | White/Blue | DSW-1 | | | |
| 26 | Yellow/Red | DSW-2 | | | |
| 27 | Yellow/Blue | DSW-2 | | | |
| 28 | White/Blue | KSW-C | | Common for keylock switch | 4.13 |
| 29 | Yellow/Red | KSW-1 | | Keylock switch | |
| 30 | Yellow/Blue | KSW-2 | | | |
| 31 | Pink/Red | Spare SW | | Spare | |
| 32 | Pink/Blue | Spare SW | | | |
| 33,34,35 | – | NC | | Not used | |
| 36 | Orange/Blue | DC 24V+ | | 24V DC power supply "+" | 4.8 |
| 37 | Orange/Red | | | | |

**Note 1:**

These are signals for communication with the PLC. When connecting to a port other than the programming port of the FX, A, QnA or Q series PLC, refer to the manual of the connected module. Also use a relay cable. For relay cable details, refer to subsection 5.5.2.

### 5.6.3 F9GT-HCNB Conversion Box

The 25-pin D-Sub connector of an external cable is converted into terminal blocks 2), 3) and a PLC port (9-pin D-Sub type).




This product is provided for RS-422 connection. Not compatible with RH model.

#### 1) PLC port (9-pin D-Sub type)

| F9GT-HCNB | F9GT-HCAB-□M | | Description |
|---|---|---|---|
| PLC port (9-pin D-Sub type) | Handy GOT connector | | |
| | 25-pin D-Sub | Signal name | |
| 1 | 2 | TXD+(SDA) | Signal wires for communication with PLC (For wiring, refer to the chapter corresponding to the connected PLC.) |
| 2 | 6 | RXD+(RDA) | |
| 3 | 4 | RTS+(RSA) | |
| 4 | 8 | CTS+(CSA) | |
| 5 | 10 | SG | |
| 6 | 3 | TXD-(SDB) | |
| 7 | 7 | RXD-(RDB) | |
| 8 | 5 | RTS-(RSB) | |
| 9 | 9 | CTS-(CSB) | |
| Shell | 1 | FG | Frame ground |

#### 2) Terminal block for operation switches

| F9GT-HCNB | F9GT-HCAB-□M | | Description |
|---|---|---|---|
| Terminal block for operation switches | Handy GOT connector | | |
| | 25-pin D-Sub | Signal name | |
| SWCOM | 14 | SW-COM (common) | For operation switches |
| SW1 | 15 | SW1 | |
| SW2 | 16 | SW2 | |
| SW3 | 17 | SW3 | |
| SW4 | 18 | SW4 | |

#### 3) Terminal block for power supply and emergency stop switch

| F9GT-HCNB | F9GT-HCAB-□M | | Description |
|---|---|---|---|
| Terminal block for power supply and emergency stop switch | Handy GOT connector | | |
| | 25-pin D-Sub | Signal name | |
| DC24V+ | 24,25 | DC24V+ | 24V DC power supply of the main unit |
| DC24VG | 12,13 | DC24VG | |
| FG | 1 | FG | Frame ground |
| ES1 | 21 | ES1 | Emergency stop switch (Both ends of the contact of the switch are present here.) |
| ES1 | 22 | ES1 | |

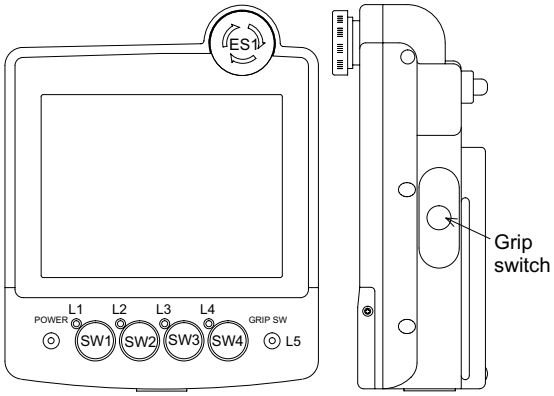
## 5.7 Outline of Internal Wiring

The Handy GOT is equipped with the following switches and indicator LEDs shown below.

**Handy GOT (Excluding RH model)**

**1) Switch assignment**

The figure below shows the switch assignment. Each switch is expressed in abbreviations as follows.




| Abbreviation | Name | Reference |
|---|---|---|
| SW1~SW4 | Operation switches | 5.9.1 |
| ES1 | Emergency stop switch | 5.10 |
| L1~L4 | Indicator LEDs for operation switches | 5.9.1 |
| L5 | Indicator LED for grip switch | 5.11 |
| – | Grip switch | |

**Switches requiring external wiring**

The following switches have to be connected to the PLC or external input equipment through the operation switch connector.

- Operation switches
- Emergency stop switch

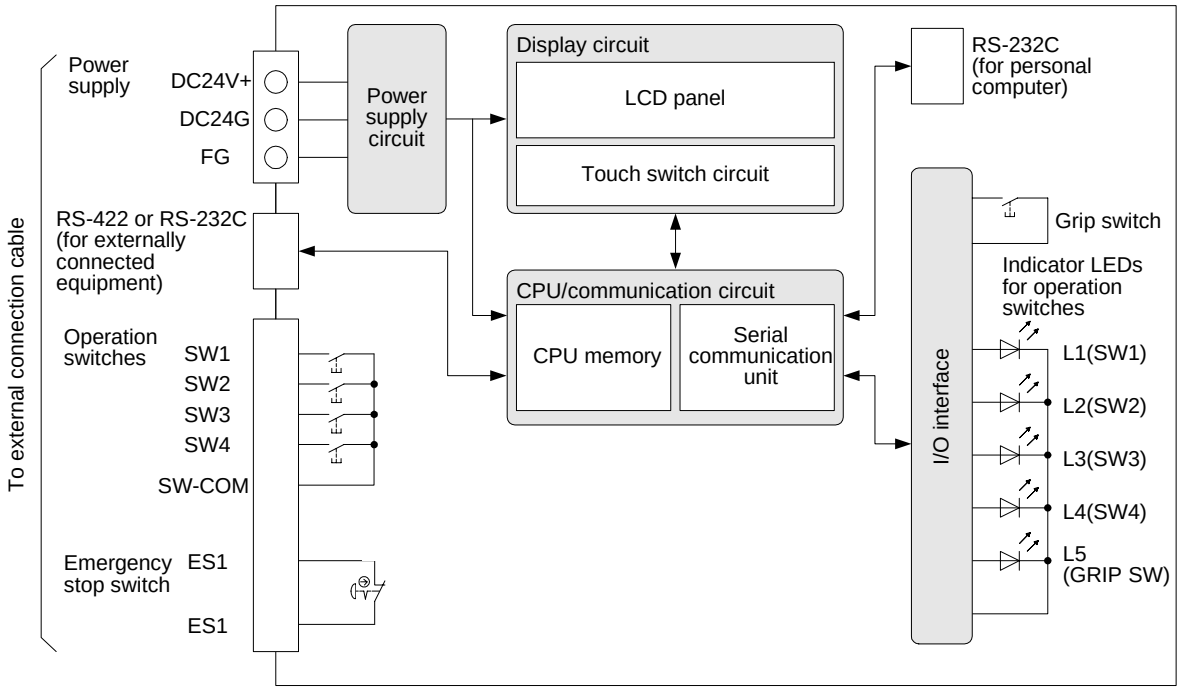
**Switch and LEDs not requiring external wiring**

Because the following switch and LEDs are connected to the display unit CPU and ready for serial communication with the PLC through the communication port, they do not have to be wired.

- Grip switch and indicator LED for grip switch
- Indicator LEDs for operation switches

**2) Internal wiring of switches**

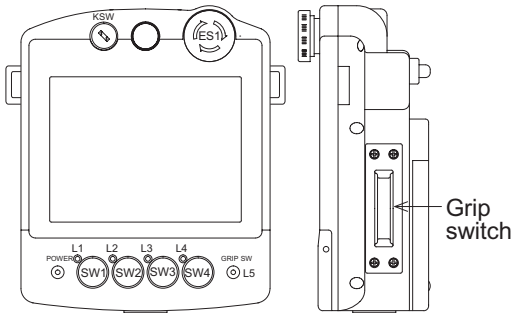
Each switch on the previous page is wired inside the Handy GOT as shown below.
This chapter explains the wiring of external cable is explained here.



### Handy GOT RH model

#### 1) Switch assignment

The figure below shows the switch assignment. Each switch is expressed in abbreviations as follows.




| Abbreviation | Name | Reference |
|---|---|---|
| SW1~SW4 | Operation switches | 5.9.1 |
| ES1 | Emergency stop switch | 5.10 |
| KSW1,KSW2 | Keylock switch | 5.13 |
| L1~L4 | Indicator LEDs for operation switches | 5.9.1 |
| L5 | Indicator LED for grip switch | 5.12.2 |
| DSW1,DSW2 | Grip switch | 5.12 |

**Switches requiring external wiring**

The following switches have to be connected to the PLC or external input equipment through the operation switch connector.

- Operation switches
- Emergency stop switch
- Grip switch
- Keylock switch

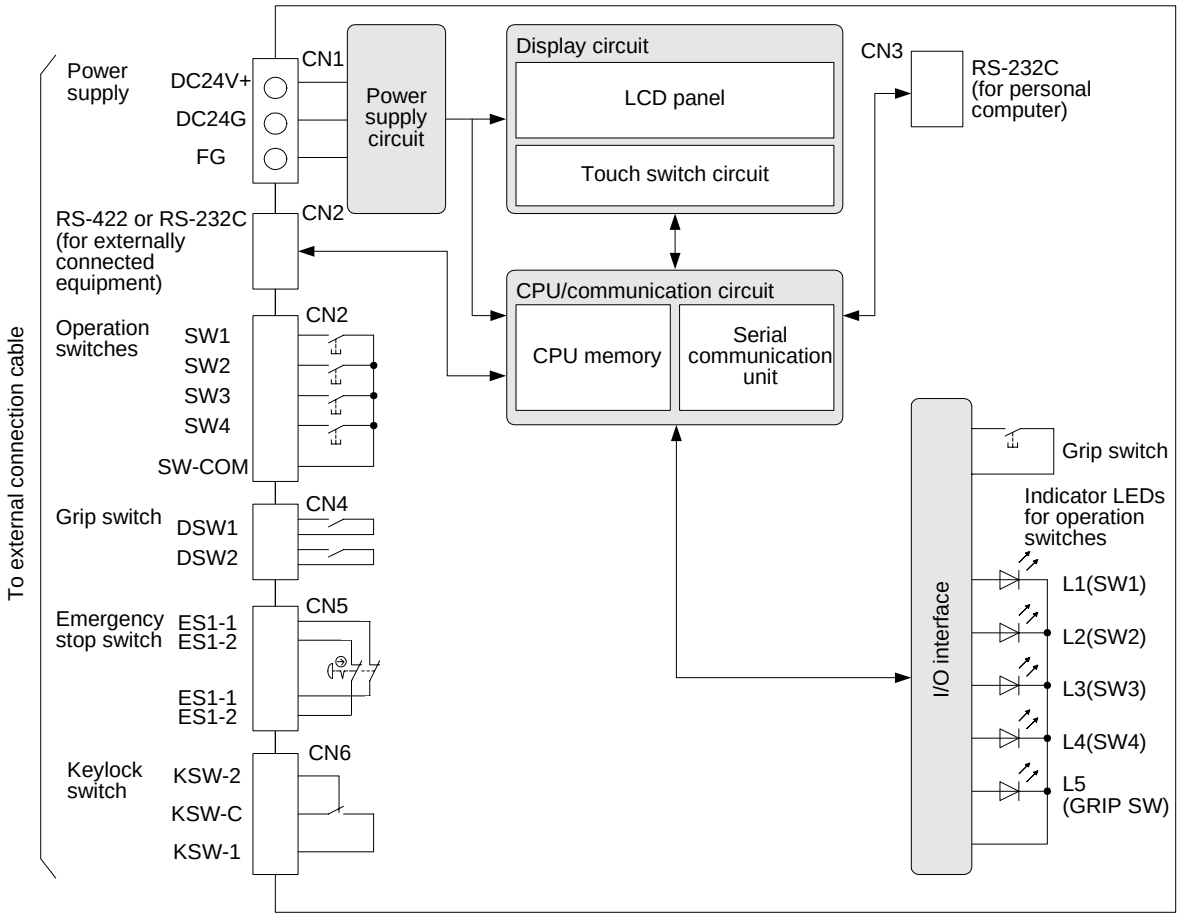
**LEDs not requiring external wiring**

Because the following switch and LEDs are connected to the display unit CPU and ready for serial communication with the PLC through the communication port, they do not have to be wired.

- Indicator LED for grip switch
- Indicator LEDs for operation switches

#### 2) Internal wiring of switches

Each switch on the previous page is wired inside the Handy GOT as shown below.
The connectors CN1 to CN5 (except CN3) are connected to the PLC via an external cable (F9GT-RHCAB-☐M).

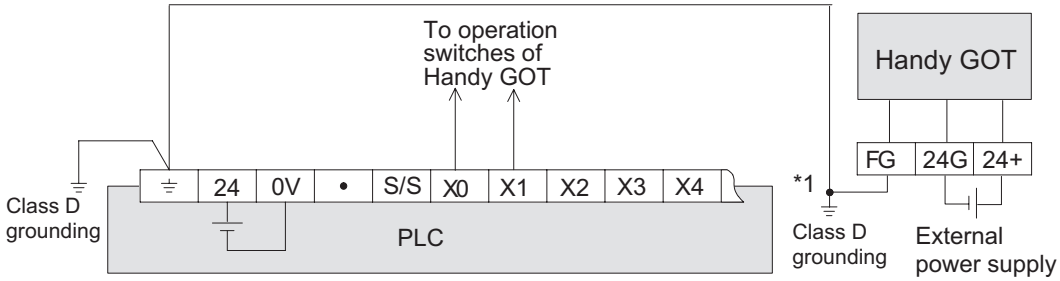


## 5.8 Wiring for 24V DC Power Supply and Class D Grounding

The power is supplied from the external power supply to the Handy GOT.
The current consumption is 300mA at 24V DC.

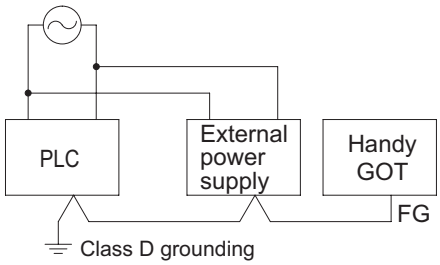
Example when the power is supplied from the external power supply

Connect the power cable (untied wires) or connector of the Handy GOT to the 24V DC external power supply.



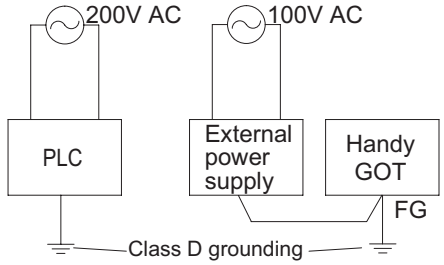

*1 Caution on class D grounding according to input power supply

a) When the input power supply is equivalent




When the input power for the PLC main unit is equivalent to the input power for the external power supply (24V DC), grounding may be performed by connecting the frame ground of the Handy GOT to the ground terminal ( ⏚ ) of the PLC.

b) When the input power supply is different

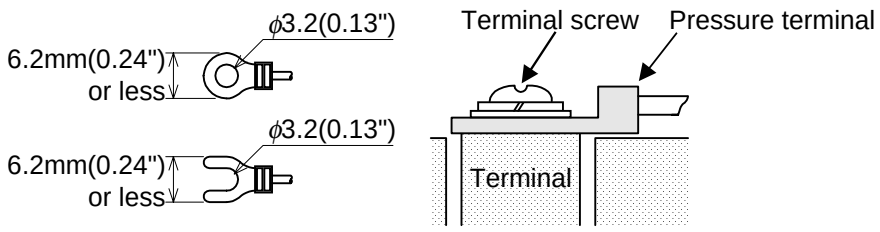



When the input power supply of the external power supply is different (PLC: 200V AC, external power supply: 100V AC), perform dedicated grounding to each of the PLC and Handy GOT separately.

Pin layout

| Signal name | External cable | | | Connector conversion box |
|---|---|---|---|---|
| | F9GT-HCAB-□M | F9GT-HCAB1-□M | F9GT-RHCAB-□M | F9GT-HCNB |
| 24+ | 24,25 | Blue/white, gray/white | 36,37 | DC24V+ |
| 24G | 12,13 | Purple, orange | 18,19 | DC24VG |
| FG | 1 | Drain wire | 1 | FG |

Recommended feature size of terminal (H9GT-HCNB conversion box)



## 5.9 Wiring and Handling of Operation Switches SW1 to SW4

This section explains the wiring and the use of the operation switches and the grip switch as well as control of the LEDs for confirming pressing of the switches.

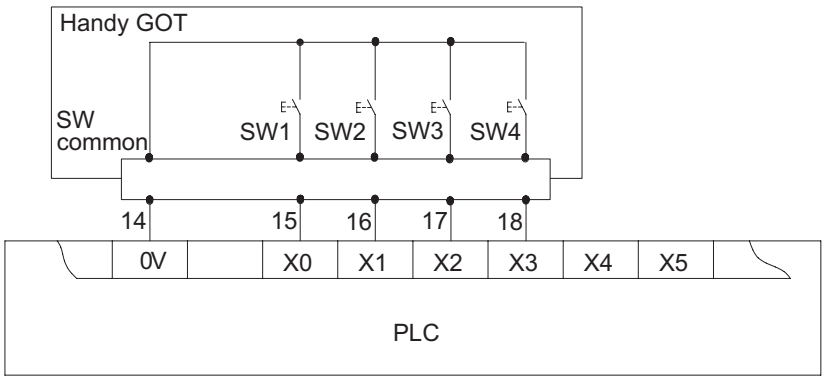
### 5.9.1 Handling of operation switches

This section explains the use of the operation switches and control of the LEDs for confirming pressing of the switches.
The switches should be wired by the user. LED indication is executed through communication.

**1) Wiring the operation switches**

The operation switches are assigned as follows, and connected to the PLC through an external cable.

Connection example




Pin layout

| Signal name | External cable | | | Conversion box |
|---|---|---|---|---|
| | F9GT-HCAB-☐M | F9GT-HCAB1-☐M | F9GT-RHCAB-☐M | F9GT-HCNB |
| SW-COM | 14 | Fresh green | 12 | SWCOM |
| SW1 | 15 | Sky blue | 13 | SW1 |
| SW2 | 16 | Black/white | 14 | SW2 |
| SW3 | 17 | Red/white | 15 | SW3 |
| SW4 | 18 | Green/white | 16 | SW4 |

In the wire colors of the F9GT-HCAB1-☐M, the indication "Color 1/Color 2" indicates striped two colors.

**2) Input of operation switches**

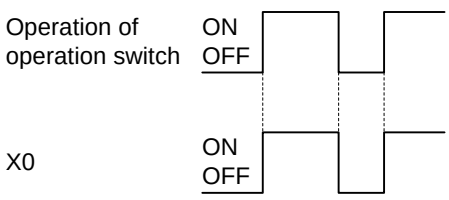
Use the operation switches of the Handy GOT as follows.

**How to use the operation switches**

Because the operation switches SW1 to SW4 are directly connected to inputs of the PLC, they can be controlled freely by programs in the PLC in the same way as general inputs.

- An operation switch is taken into the PLC as a momentary type switch with N/O contact.

Example:
When a switch is wired to X0 of the PLC




- When you would like to treat input of an operation switch as N/C contact or an alternate type switch, create a proper program in the PLC.

**3) Lighting of LEDs for confirming operation**

A green LED is provided for each of four operation switches SW1 to SW4 and one grip switch so that pressing of each switch can be confirmed.
Each LED is assigned to a bit device by the screen creation software. When the value of a bit device is "1", the corresponding switch is lit. When the value is "0", the corresponding switch is extinguished.

a) Assignment of devices controlling the LEDs

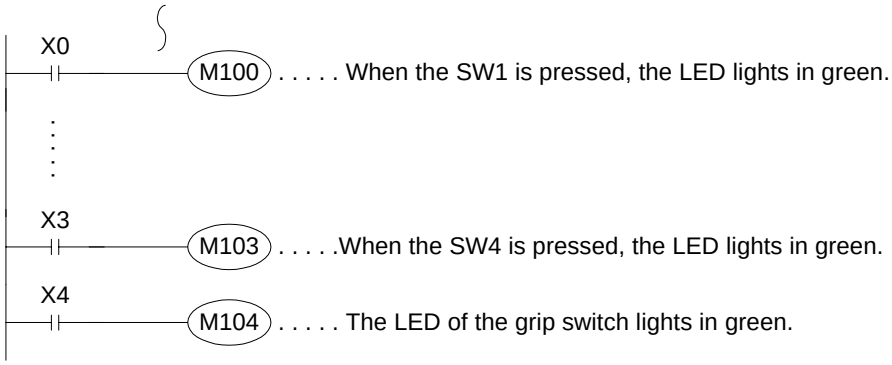
| Device | Name | |
|---|---|---|
| M100 | Operation switch SW1 (green) | ← Set this device using the screen creation software. The LEDs for the operation switches and grip switch can be allocated successively. |
| M101 | Operation switch SW2 (green) | |
| M102 | Operation switch SW3 (green) | |
| M103 | Operation switch SW4 (green) | |
| M104 | Grip switch (green) | ← Valid when the OS version is 6.00 or later |

b) Setting in the screen creation software

The head device for the LEDs of the operation switches should be set in the screen creation software.
For the details, refer to section 5.14.

c) Program example

The operation switches SW1, SW2, SW3 and SW4 are assigned to X0, X1, X2 and X3 respectively. The grip switch is wired to X4.
The device of "Output Indicator" is set to M100 in the screen creation software.
In a sequence program, inputs X0 to X4 are assigned to M100 to M104 using the OUT instruction.


X0
M100
. . . . . When the SW1 is pressed, the LED lights in green.
X3
M103
. . . . .When the SW4 is pressed, the LED lights in green.
X4
M104
. . . . . The LED of the grip switch lights in green.

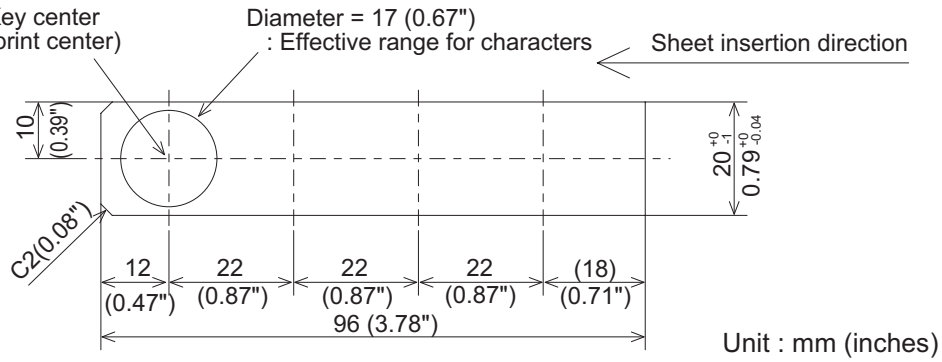
### 5.9.2 Preparation of Operation Switch Name Sheet

This section explains how to prepare the operation switch name sheet.

**1) Preparing the name sheet**

a) Use a name sheet and an OHP sheet (transparent sheet) offered as accessories.

b) The mount sheet is of actual dimensions.
If you would like to make additional mount sheets, refer to the following dimensions.

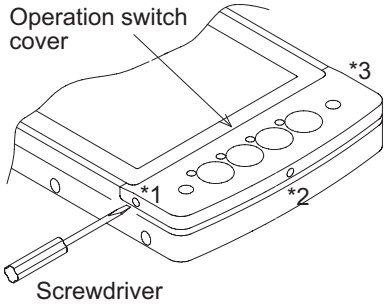



c) When the work in b) is completed, copy the contents of the name sheet base on an OHP sheet in the actual dimensions (100%) using a copy machine.
When using a different OHP sheet, use the following type. Make sure that the selected OHP sheet can be used in a copy specification.

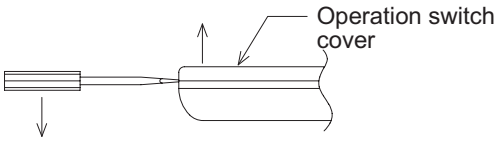
[Recommended OHP sheet]
Material: Polyester film
Thickness: 0.1mm (0.004")

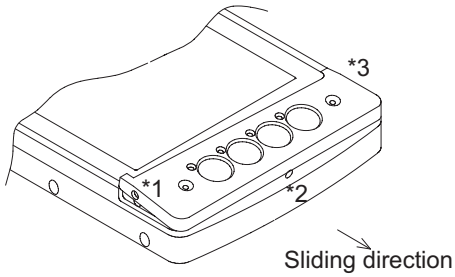
**2) Attaching the sheet**

a) Remove the operation switch cover.



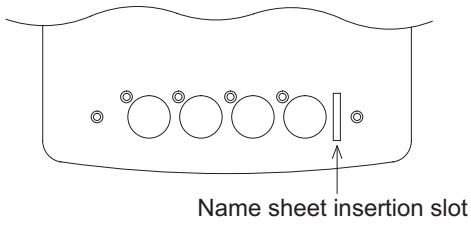

Insert a screwdriver into the clearance *1 or *3 between the operation switch cover and the main unit, then slowly push the switch cover up.



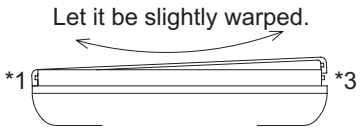




When the either side *1 or *3 comes off, pull it in the sliding direction shown on the left to remove it.

b) Insert the sheet.
Insert it into the following position shown below of the Handy GOT.




c) Attach the operation switch cover.



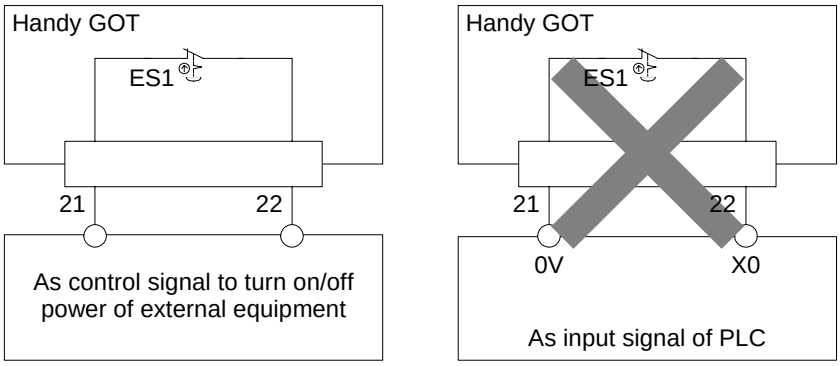

Align the operation switch cover with a protrusion in the position *1 or *3 shown in the figure in a) above, then attach the operation switch cover while flexing it slightly.

## 5.10 Wiring and Handling of Emergency Stop Switch (ES1)

The emergency stop switch is assigned as shown below.

**Handy GOT (Excluding RH model)**

**1) Connection example**




When turning on and off the power of external equipment, make sure that the load is 24V DC, 1 A (contact specifications) or less.
Make sure to construct the emergency stop circuit outside the PLC.

**2) Pin assignment**

| Signal name | External cable | | Conversion box |
|---|---|---|---|
| | F9GT-HCAB-☐M | F9GT-HCAB1-☐M | F9GT-HCNB |
| ES1 | 21 | Brown/white | ES1 |
| ES1 | 22 | Yellow/white | ES1 |

In the wire colors of the F9GT-HCAB1-☐M, the indication "Color 1/Color 2" indicates striped two colors.

**3) Used switch model name**

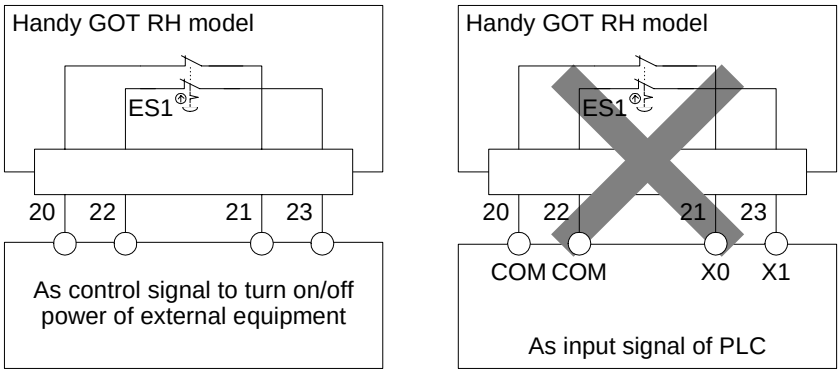
| | |
|---|---|
| Model name | AH165-VR01 (manufactured by Fuji Electric) |
| Specifications | N/C contact, 1 A/24V DC individual wiring |

**4) Caution on use**

The emergency stop switch is the N/C contact type.
If the Handy GOT is attached and removed using a connector, when it is removed from the machine, the switches turn OFF from ON. This is the status in which the emergency stop switch is pressed. This fact should be taken into consideration in the design.

### Handy GOT RH model

#### 1) Connection example




When turning on and off the power of external equipment, make sure that the load is 24V DC, 1 A (contact specifications) or less.
Make sure to construct the emergency stop circuit outside the PLC.

#### 2) Pin assignment

| Signal name | External cable |
|---|---|
| | F9GT-RHCAB-□M |
| ES1-1 | 20 |
| ES1-1 | 21 |
| ES1-2 | 22 |
| ES1-2 | 23 |

In the wire colors of the F9GT-HCAB1-□M, the indication "Color 1/Color 2" indicates striped two colors.

#### 3) Used switch model name

| | |
|---|---|
| Model name | AH165-VR02 (manufactured by Fuji Electric) |
| Specifications | 2b contact, 1 A/24V DC individual wiring |

#### 4) Caution on use

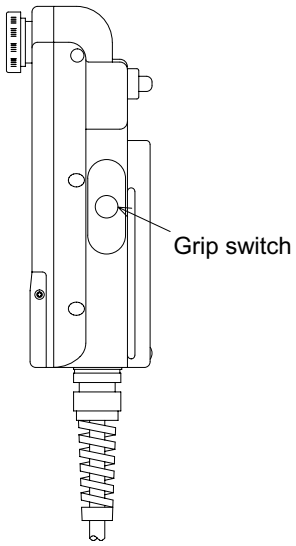
The emergency stop switch is the N/C contact type.
If the Handy GOT is attached and removed using a connector, when it is removed from the machine, the switches turn OFF from ON. This is the status in which the emergency stop switch is pressed. This fact should be taken into consideration in the design.

## 5.11 Handling of grip switch (excluding RH model)

Because the grip switch executes communication with connected equipment, wiring is not required.

### 5.11.1 Function of Grip Switch

The grip switch is provided on the side of the Handy GOT. While the grip switch (N/O contact type) is being pressed manipulation of the touch keys on the screen is effective.
The ON/OFF status of the grip switch can be monitored by the PLC.
In the OS version 6.00 or later, you can select handling of the grip switch and the LED control method.



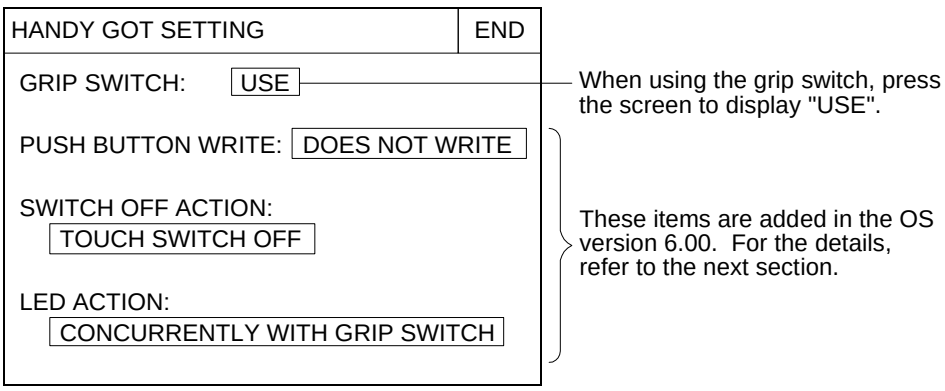

### 5.11.2 Setting in main unit and screen creation software

Make the grip switch valid or invalid in "SET-UP MODE" of the Handy GOT or the screen creation software. (The priority is given to writing in the screen creation software.) (The default value is "USE" (valid).)
In the OS version 6.00 or later, if the grip switch is set valid, the touch key OFF operation can be changed by the grip switch as described in "3) Switch OFF operation" in the next section. (For the details, refer to the next page.)
For the detailed setting procedure, refer to section 5.14.

**1) Setting in the main unit**

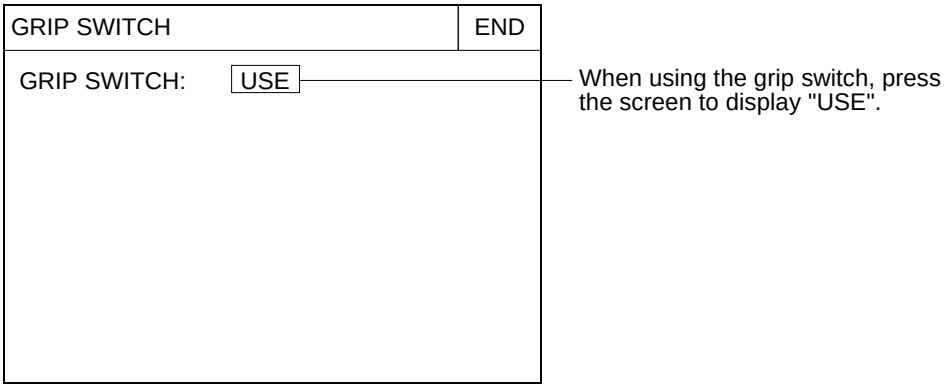
**When the OS version is 6.00 or later**

Set the grip switch valid ("USE") or invalid ("DON'T USE") in "HANDY GOT SETTING" in "SET-UP MODE".


HANDY GOT SETTING
END
GRIP SWITCH:
USE
When using the grip switch, press the screen to display "USE".
PUSH BUTTON WRITE:
DOES NOT WRITE
SWITCH OFF ACTION:
TOUCH SWITCH OFF
LED ACTION:
CONCURRENTLY WITH GRIP SWITCH
These items are added in the OS version 6.00. For the details, refer to the next section.

**When the OS Version is earlier than 6.00**

Set the grip switch valid ("USE") or invalid ("DON'T USE") in "GRIP SWITCH" in "SET-UP MODE" in the Handy GOT.




**2) Setting in the screen creation software**

The grip switch can be set in the GT Designer and the DU/WIN.
If a screen is created using the screen creation software whose version does not correspond the Handy GOT, the grip switch is always valid on the screen.
For setting of items other than the grip switch, the screen creation software of proper version is required.

### 5.11.3 Grip switch operation specifications

**1) Grip switch (valid/invalid)**

When "GRIP SWITCH" is set to "USE" (valid), touch keys (on user screens) in the screen mode are enabled while the grip switch is being pressed.
Availability of the grip switch is being set to all user screens.
On system screens, touch keys are always enabled.

| Screen type | Screen number | Grip switch function |
|---|---|---|
| User screen | 1 ~ or 0 ~ *1 | Valid<br>(While the grip switch is being pressed, touch keys are enabled and offer the screen changeover function and the switch function.) |
| System screen | 1001~ | Invalid<br>(Without regard to the ON/OFF status of the grip switch, touch keys are always enabled and offer the screen changeover function and the switch function.) |

*1 The head number of the user screen number varies depending on the screen creation software.

When "GRIP SWITCH" is set to "DON'T USE", touch keys are always enabled without regard to the ON/OFF status of the grip switch.

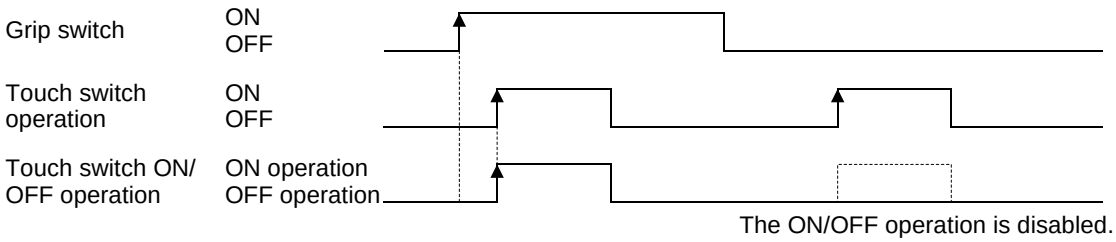
**2) Write of the grip switch ON/OFF status**

It can be selected whether the grip switch ON/OFF switch is communicated with the PLC.
When "GRIP SWITCH" is set to "DON'T USE", "PUSH BUTTON WRITE" can be set to "DOES NOT WRITE" or "WRITE".
When "GRIP SWITCH" is set to "USE", "PUSH BUTTON WRITE" can be set to only "WRITE".
For the details of communication with the connected equipment, refer to the previous section.

**3) Switch OFF operation**

a) Basic operation

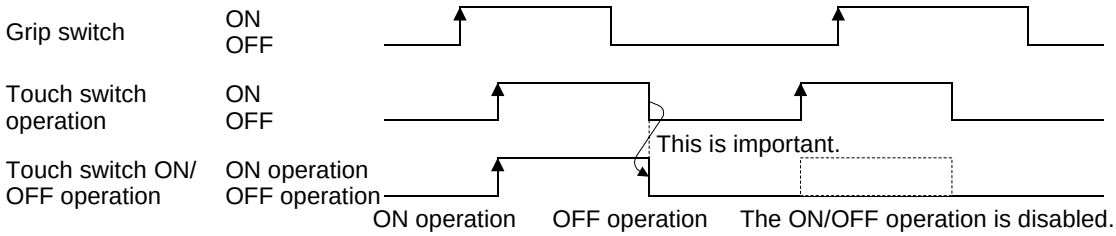
While the grip switch is set valid in the Handy GOT, it controls the operations of touch keys, numerical inputs and ASCII inputs (hereafter referred to as touch keys as representative).
While the grip switch is being pressed (ON status), the touch key operation is enabled as follows.
While the grip switch is released (OFF status), the touch key operation is disabled and any operation from the touch panel is disabled.




b) ON/OFF operation timing

When "SWITCH OFF ACTION" is set to "TOUCH KEY OFF"

While the grip switch is ON, the touch key ON operation is executed when the touch key turns ON.

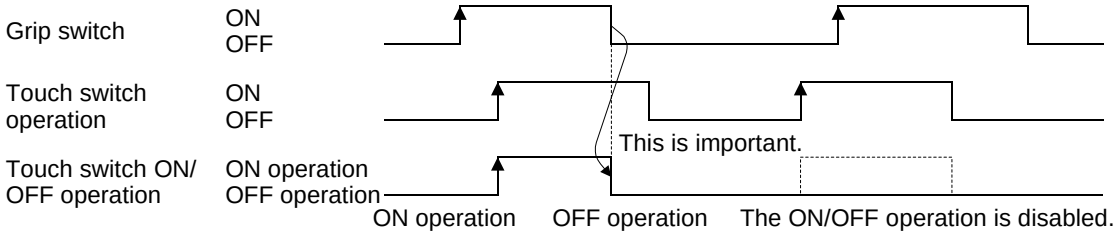



**Important point**

The (momentary) touch key operation is not related to the grip switch ON/OFF status. When the touch key turns OFF from ON, the control target bit device is set to OFF.

When "SWITCH OFF ACTION" is set to "GRIP SWITCH OFF"

While the grip switch is ON, the touch key ON operation is executed when the touch key turns ON.




**Important point**

The (momentary) touch key operation is related to the grip switch ON/OFF status. Even while a touch key is ON, the control target bit device is set to OFF when the grip switch is released.

c) Others

When the grip switch is pressed while the screen is blacked out by the screen save function, the screen save function is released and the screen display becomes active.

**4) LED operation**

It can be selected whether the LED ON/OF status is controlled by the grip switch ON/OFF status, controlled by the PLC, or always set to OFF.

| Selection item | Description |
|---|---|
| CONCURRENTLY WITH GRIP SWITCH | While the grip switch is being pressed, the LED on the front panel is lit. |
| CONCURRENTLY WITH BIT DEVICE | The LED on the front panel is lit or extinguished by a bit device of the PLC. |
| ALWAYS OFF | The LED on the front panel is always extinguished. |

When "LED ACTION" is set to "CONCURRENTLY WITH BIT DEVICE", the setting to assign a bit device of the PLC is required. For the details, refer to section 5.8.

### 5.11.4 Communication with connected equipment (grip switch ON/OFF signal)

The grip switch ON/OFF status can be confirmed in a bit device. (Have in mind that the bit device number varies depending on the screen creation software.)
In the Handy GOT, while the grip switch is being pressed, the GRIP SW LED on the front face is lit in green.

**1) Assignment of device used to confirm the grip switch ON/OFF status**

Assign a device used to confirm the grip switch ON/OFF status using the screen creation software.

a) In the case of screen creation software GT Designer

In "Common" on the menu, set "Write device" in "System Information". Then, the specified write word device +4 is assigned to the grip switch.
The figure below shows the relationship between bits in the system signal area and the grip switch. When the bit value is "1", the LED is ON. When it is "0", the LED is OFF.

**Write device +4**

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

Grip switch

b) In the case of screen creation software DU/WIN

On the menu, set "Bit Device" in "View/Project" - "System Settings" - "Interface Devices". Then, the 8th bit device is assigned to the grip switch.
The figure below shows the relationship between bits in the system signal area and the grip switch. When the bit value is "1", the LED is ON. When it is "0", the LED is OFF.

**Bit device**

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M15 | M14 | M13 | M12 | M11 | M10 | M9 | M8 | M7 | M6 | M5 | M4 | M3 | M2 | M1 | M0 |

Grip switch

**2) Program example**

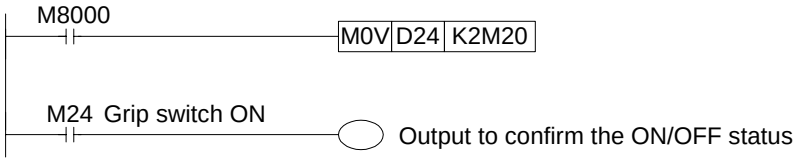
**When the OS version is 6.00 or later**

It can be selected whether communication with the PLC is enabled even while the grip switch is invalid. The grip switch LED ON/OFF status can be controlled from the PLC.

a) In the case of screen creation software GT Designer

When the grip switch turns ON or OFF, the 5th bit of the write device in the system information turns ON or OFF.

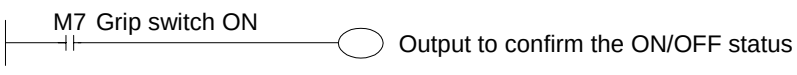
Example: When "Write device" in "System Information" is set to D20
D24 b4: Grip switch ON (which turns ON when the grip switch is pressed)




b) In the case of screen creation software DU/WIN

When the grip switch turns ON or OFF, the 8th control bit device turns ON or OFF.

Example: When "Bit Device" (head device number) in "Interface Devices" is set to M0
M7: Grip switch ON (which turns ON when the grip switch is pressed)

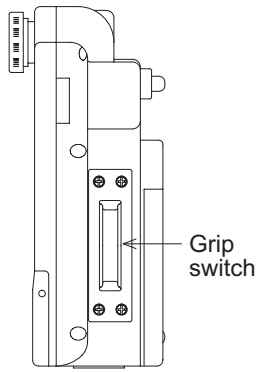



**When the OS version is earlier than 6.00**

While the grip switch is valid, communication with the PLC is enabled.

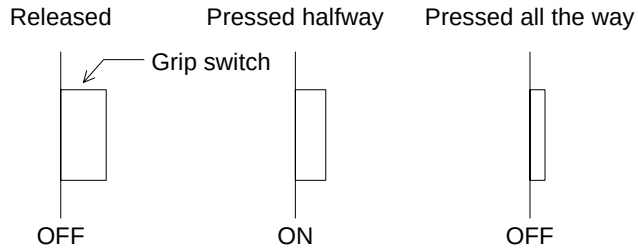
## 5.12 Handling of grip switch (RH model only)

The grip switch is provided on the side of the Handy GOT and wired to the input of the PLC or other device.
The ON/OFF status of the grip switch can be monitored by the PLC.




The grip switch is a 3-positioned operation switch. The ON/OFF status is shown below.

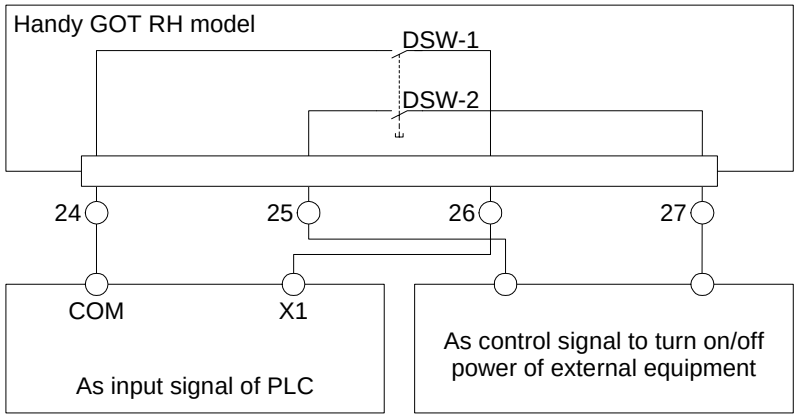
Grip switch seen from the side




### 5.12.1 Wiring of Grip Switch

The grip switch is a twin contact type which performs 3-positioned operation as shown above.

**Connection example**




When turn on and off the control signal of external equipment, make sure that the load is 24V DC, 1A (contact specification) or less.

**Pin assignment**

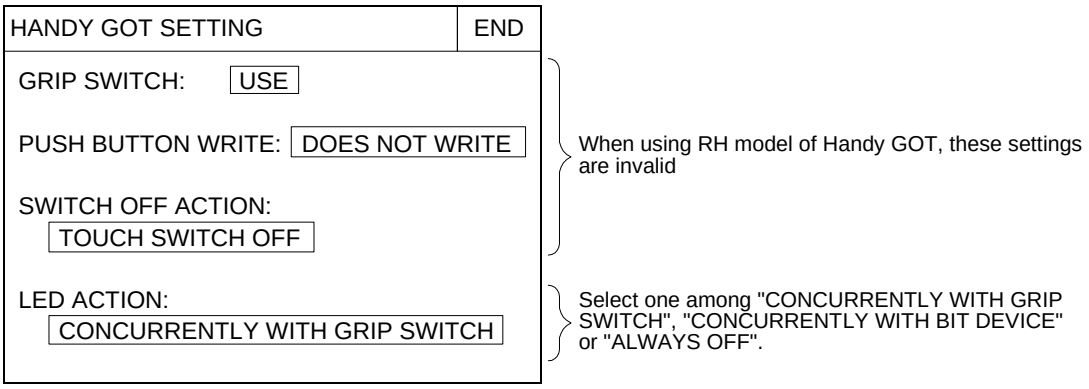
| Signal name | External cable |
|---|---|
| | F9GT-RHCAB-□M |
| DSW-1 | 24 |
| DSW-1 | 25 |
| DSW-2 | 26 |
| DSW-2 | 27 |

### 5.12.2 Setting of Grip Switch LED

The grip switch LED provided on the front face of the Handy GOT can be set as follows in the main unit or screen creation software.

**1) Setting in Main Unit of Handy GOT**

The following screen is displayed, when selecting "OTHER MODE"-"SET-UP MODE"-"HANDY GOT SETTING".


HANDY GOT SETTING
END
GRIP SWITCH: USE
PUSH BUTTON WRITE: DOES NOT WRITE
SWITCH OFF ACTION:
TOUCH SWITCH OFF
LED ACTION:
CONCURRENTLY WITH GRIP SWITCH
When using RH model of Handy GOT, these settings are invalid
Select one among "CONCURRENTLY WITH GRIP SWITCH", "CONCURRENTLY WITH BIT DEVICE" or "ALWAYS OFF".

**2) Setting in Screen Creation Software (GT Designer)**

a) Select "Common"-"Auxiliary Setting"-"Project".

b) Click "Handy GOT settings" tab.

For the details, refer to section 5.14.

### 5.12.3 LED Action

It can be selected whether the LED ON/OF status is controlled by the grip switch ON/OFF status, controlled by the PLC, or always set to OFF.

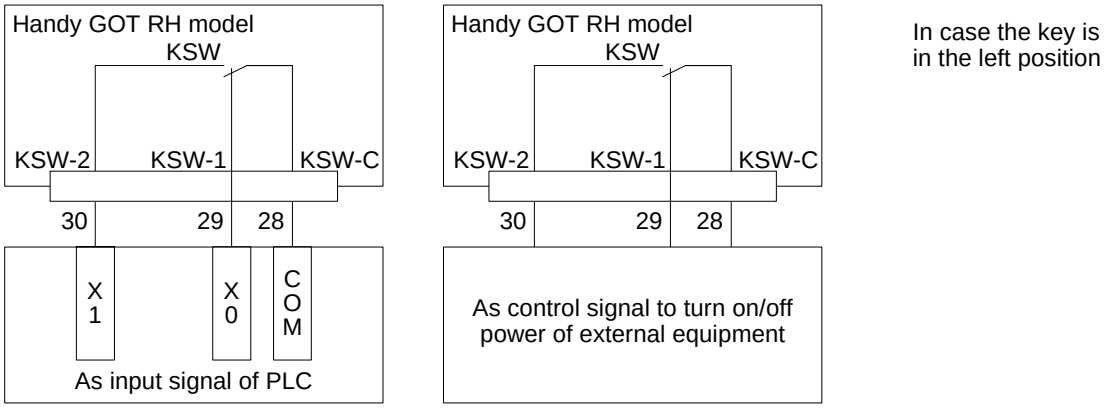
| Selection item | Description |
|---|---|
| CONCURRENTLY WITH GRIP SWITCH | While the grip switch is being pressed, the LED on the front panel is lit. |
| CONCURRENTLY WITH BIT DEVICE | The LED on the front panel is lit or extinguished by a bit device of the PLC. |
| ALWAYS OFF | The LED on the front panel is always extinguished. |

When "LED ACTION" is set to "CONCURRENTLY WITH BIT DEVICE", the setting to assign a bit device of the PLC is required. For the details, refer to section 5.8.

## 5.13 Handling of Keylock Switch (RH model only)

The keylock switch is wired to the input of the PLC or other device.

### 1) Connection Example




In case the key is in the left position

When turn on and off the control signal of external equipment, make sure that the load is 24V DC, 1A (contact specification) or less.

### 2) Pin assignment

| Signal name | External cable |
|---|---|
| | F9GT-RHCAB-□M |
| KSW-C | 28 |
| KSW-1 | 29 |
| KSW-2 | 30 |

## 5.14 Setting of Connected Equipment for GOT

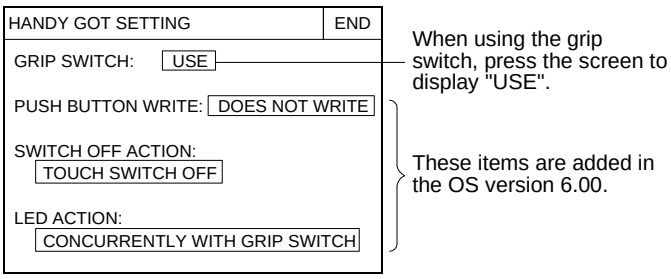
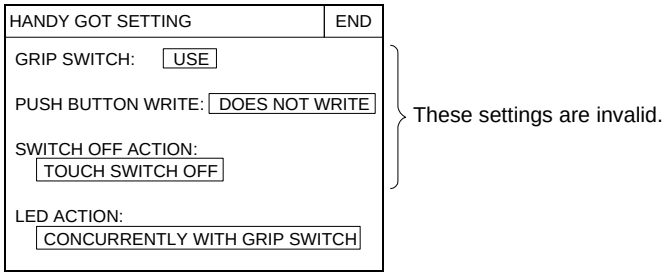
The setting in the screen creation software is required to turn on and off the LED of the operation switches and the grip switch from connected equipment. This section describes the setting method.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

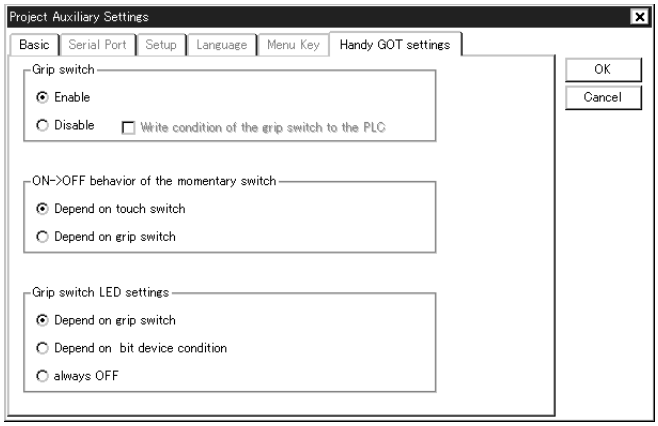
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more. Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "GRIP SWITCH".<br><When the OS version is 6.00 or later><br>Press "HANDY GOT SETTING".<br>c) Set the following.<br>"USE" (valid) or "DON'T USE"(invalid) | The "GRIP SWITCH" screen appears. |

When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "GRIP SWITCH".<br><When the OS version is 6.00 or later><br>Press "HANDY GOT SETTING".<br>e) Set the following."USE" (valid) or "DON'T USE"(invalid)<br><When the OS version is 6.00 or later><br>The grip switch operation can be set. Press an item to be changed.<br>  <br><br>When using RH model<br>  <br><br><When the OS version is earlier than 6.00><br>Only the grip switch operation can be set. | The "GRIP SWITCH" screen appears. |

- When the screen data is transferred from the screen creation software to the GOT-F900, the contents above are replaced with the contents set in the screen creation software. Have in mind that the setting about the grip switch is overwritten.

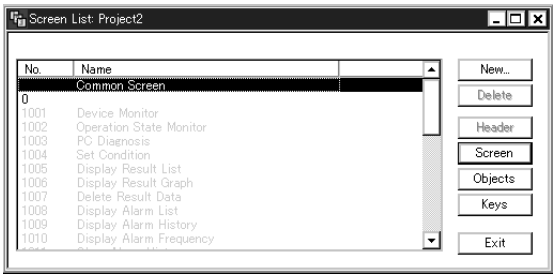
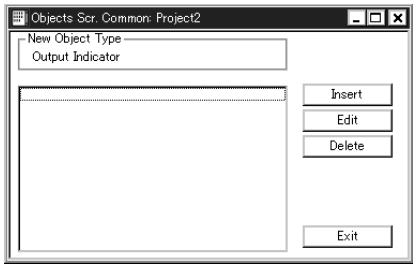
### 2) GT Designer

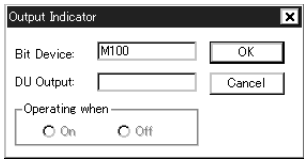
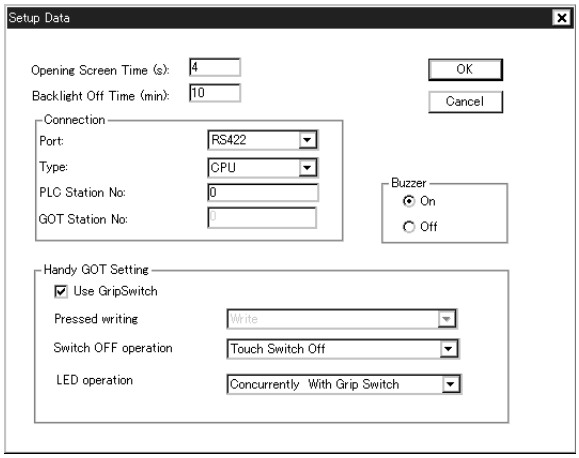
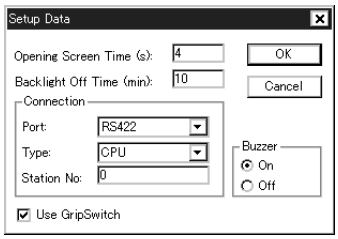
| Operation | | Display (screen name) |
|---|---|---|
| [Setting] | a) It is supposed that the GT Designer has started up and the screen data to be set is read.<br>b) Open a user screen to be set. (Any screen is available as far as it has been already created.)<br>Refer to Caution on setting of "Lamp (External)" below. | |
| [LED setting]<br>Operation switch | c)) Select "Draw"-"Animation Display"-"Lamp" on the menu.<br> <br>d) On the "Basic" tab, click "Lamp (External)" to display the check mark (✓), click the [Device] button, input a bit device to be assigned, then click [OK].<br>Refer to Caution on setting of "Lamp (External)" described later. | The "Lamp" dialog box appears. |
| [Switch setting]<br>Grip switch | e) On the menu, select "Common"-"Auxiliary Setting"-"Project".<br>f) The setting varies depending on the version of the screen creation software.<br><When the GT Designer version is SW5-F (5.05F) or later><br>Click the "Handy GOT settings" tab.<br>Click "Enable" in "Grip switch" to display the check mark (✓).<br>  <br><When the GT Designer version is earlier than SW5-F (5.05F)><br>Click the "Basic" tab.<br>Click "Enable" in "Grip switch" to display the check mark (✓).<br>When using the grip switch function (making it valid), display the check mark. When not using it (making it invalid), do not display the check mark. | The "Project Auxiliary Settings" dialog box appears. |

Caution on setting of "Lamp (External)"

1. The contents of "Lamp (External)" you have set are not displayed on the screen.
2. The check box is valid only in the F920GOT-K/F930GOT-K/Handy GOT. Never set the check box in any other series.
3. Set only one lamp for all screens of the created screen data.
4. Make sure that the bit device assigned on the "Basic" tab in "Lamp" dialog box is not included in the read/write device range set in "Common"-"System Information".

### 3) DU/WIN

| Operation | | Display (screen name) |
|---|---|---|
| [Setting] | a) It is supposed that the DU/WIN has started and the screen data to be set has been read.<br>b) Select "Common Screen" on the "Screen List" window (by clicking it to be highlighted).<br>  <br><br>If the window is closed, select "View/Project"-"Screen List" on the menu. | The "Screen List" window appears. |
| [LED setting]<br>Operation switch | c) Click the [Objects] button. | The "Objects Scr. Common" window appears. |
| | d) Select "Object"-"Indicator"-"Output Indicator" on the menu.<br>  <br> | "Output Indicator" is displayed in the "New Object Type" field on the "Objects Scr. Common" window. |

| Operation | | Display (screen name) |
|---|---|---|
| | e)Click the [Insert] button.<br>  <br><br>Input a bit device to be assigned, and click [OK].<br>Refer to Caution on setting of "Output Indicator" below.<br>Close all windows except the "Screen List" window. | The "Output Indicator" dialog box appears. |
| [Switch setting]<br>Grip switch | f) Select "View/Project"-"System Settings"-"Setup Data".<br>g)The setting varies depending on the version of the screen software version.<br><When the DU/WIN version is 2.50 or later><br>  <br><br><When the DU/WIN version is earlier than 2.50><br>  <br><br>h)Click "Use GripSwitch" to display the check mark (✓).<br>When using the grip switch function (making it valid), display the check mark. When not using it (making it invalid), do not display the check mark. | The "Setup Data" dialog box appears. |

Caution on setting of "Output Indicator"

1.The contents of "Output Indicator" you have set are not displayed on the screen.

2.The check box is valid only in the Handy GOT. Never set the check box in any other series.

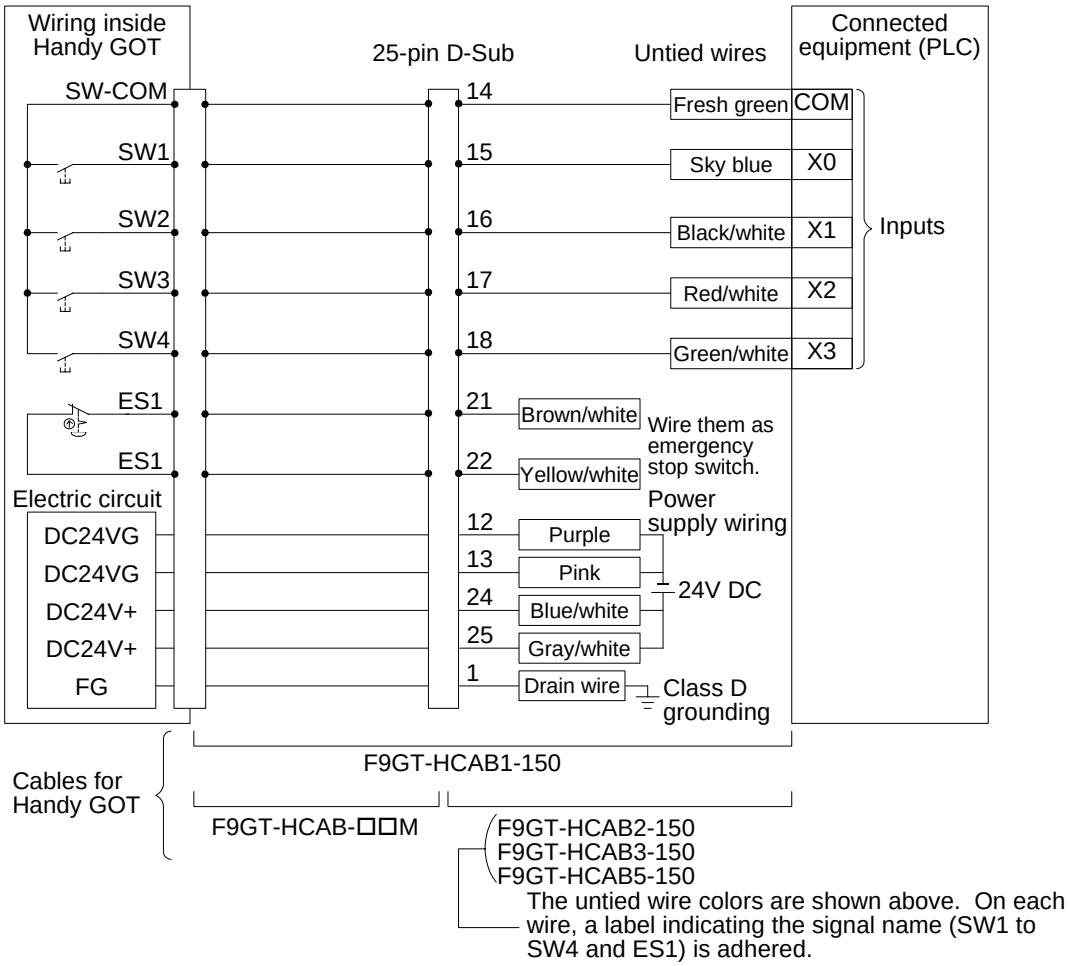
3.Set "Output Indicator" only on the common screen. Even if it is set on a user screen, it does not function.

4.Make sure that the bit device assigned on the "Output Indicator" dialog box is not included in the bit device range in set in "View/Project"-"System Settings"-"Interface Devices".

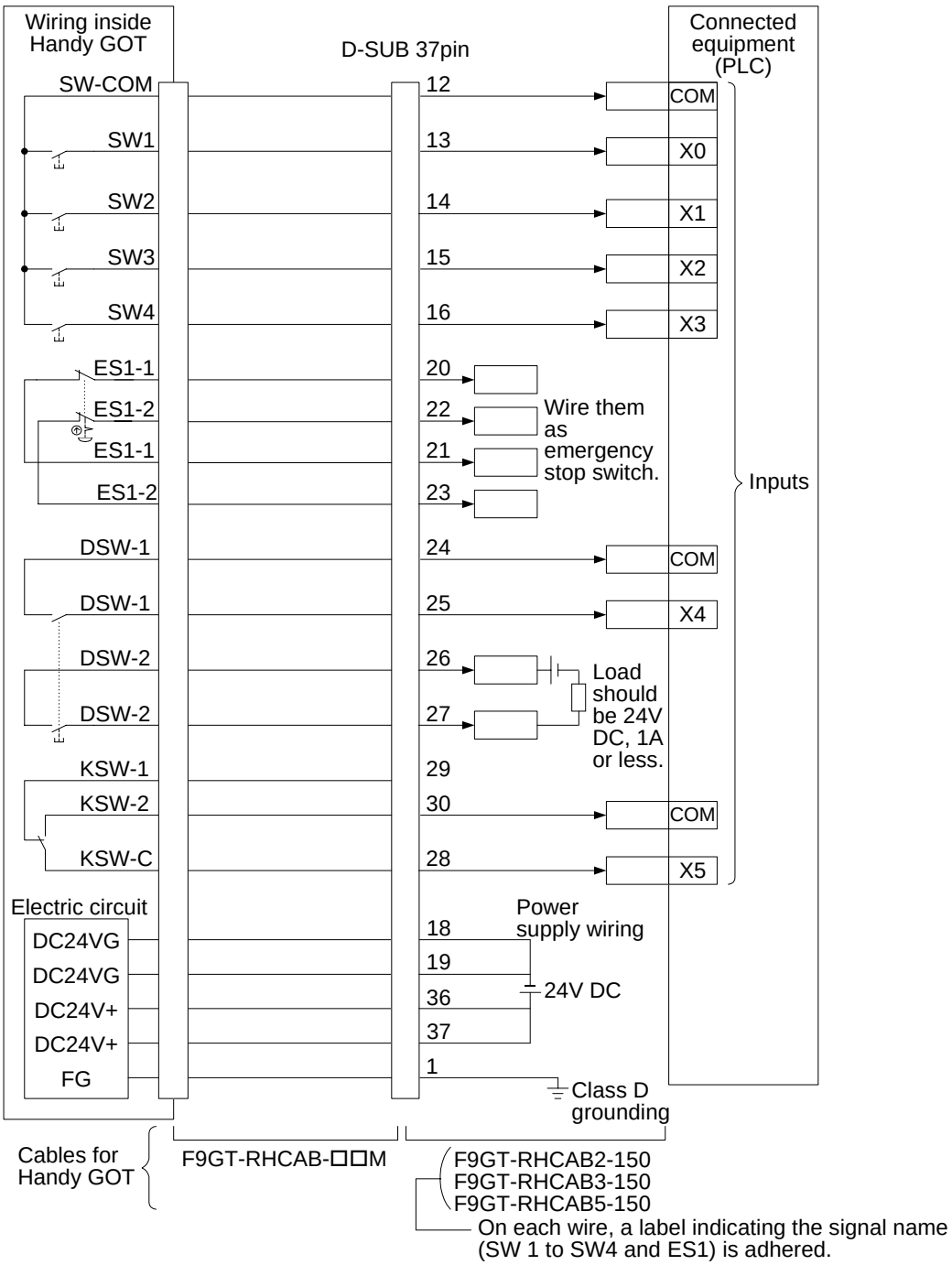
## 5.15 Connection Diagram of Handy GOT Operation Switches and Power Supply

This section explains the wiring method of the operation switches while picking up an example in which the operation switches are connected to inputs and outputs of the PLC.

**1) Wiring between Handy GOT operation switches and connected equipment**



### 2) Wiring between Handy GOT RH model operation switches and connected equipment

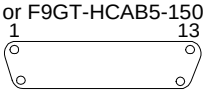
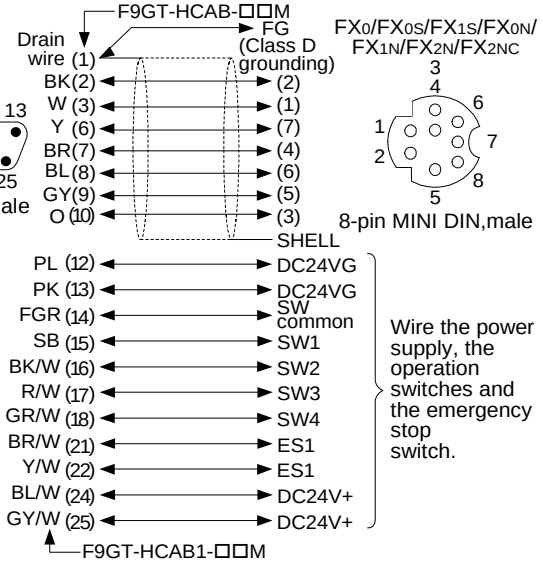
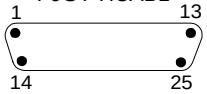
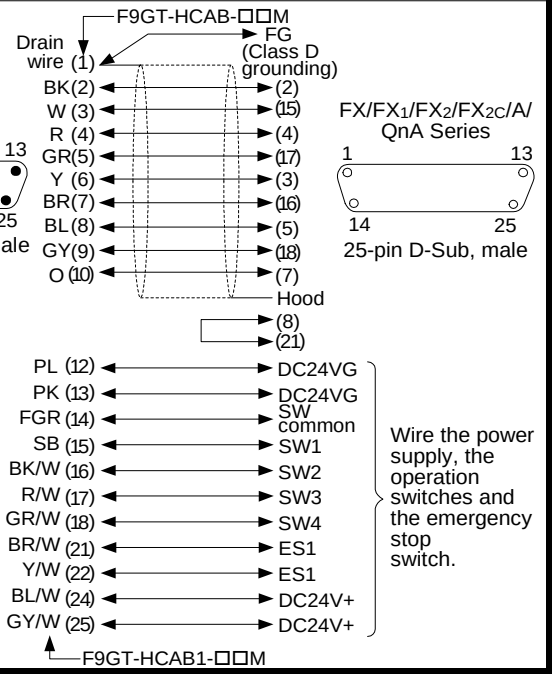


## 5.16 Cable Specification (Optional)

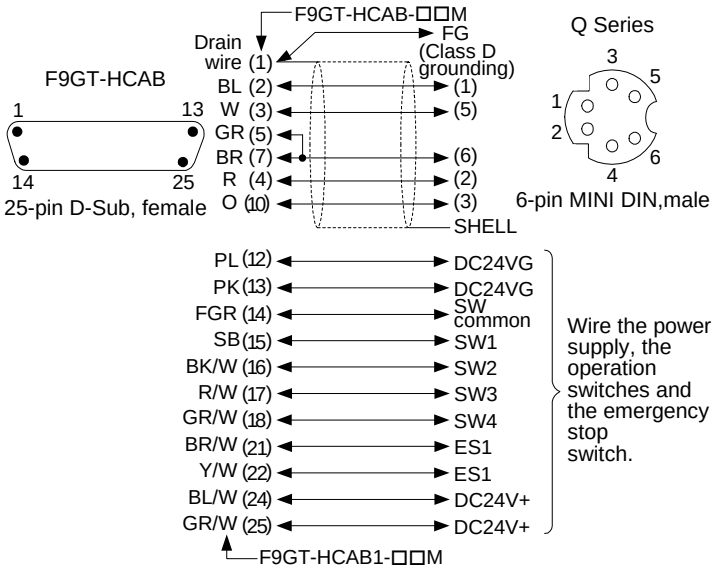
For connection to PLCs, refer to the corresponding sections in the following chapters.

### 1) Cable for the Handy GOT and the PLC

: Female type : Male type The connector figure shows the engagement face.

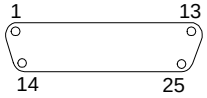
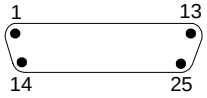
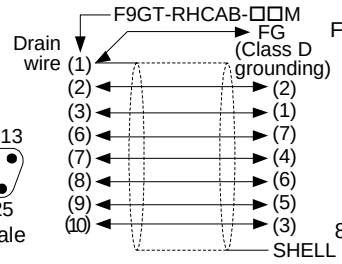
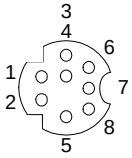
| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB2-150, F9GT-HCAB3-150 or F9GT-HCAB5-150<br>  <br><br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Untied cable |
| c) | F9GT-HCAB2-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | F9GT-HCAB<br>F9GT-HCAB1<br><br><br>25-pin D-Sub, female |  <br> | FX0/FX0S/FX1S/FX0N/ FX1N/FX2N/FX2NC<br><br><br>8-pin MINI DIN,male |
| d) | F9GT-HCAB3-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | F9GT-HCAB<br>F9GT-HCAB1<br>  <br><br>25-pin D-Sub, female |  <br> | FX/FX1/FX2/FX2C/A/ QnA Series<br><br><br>25-pin D-Sub, male |

: Female type : Male type The connector figure shows the engagement face.

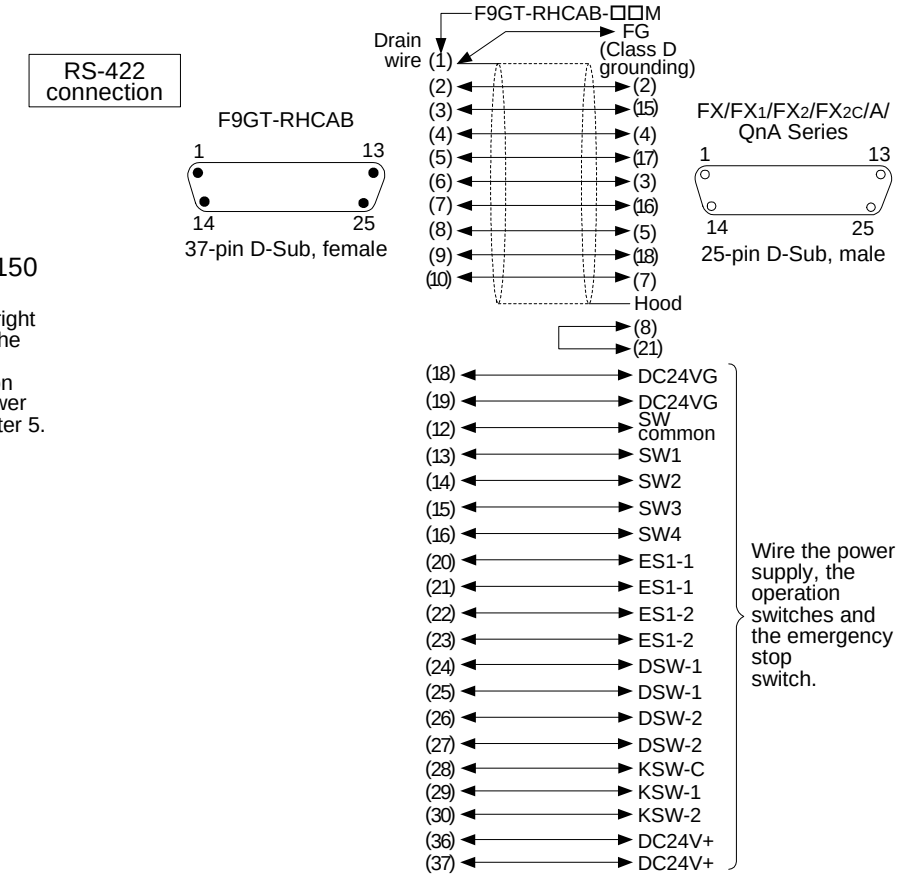
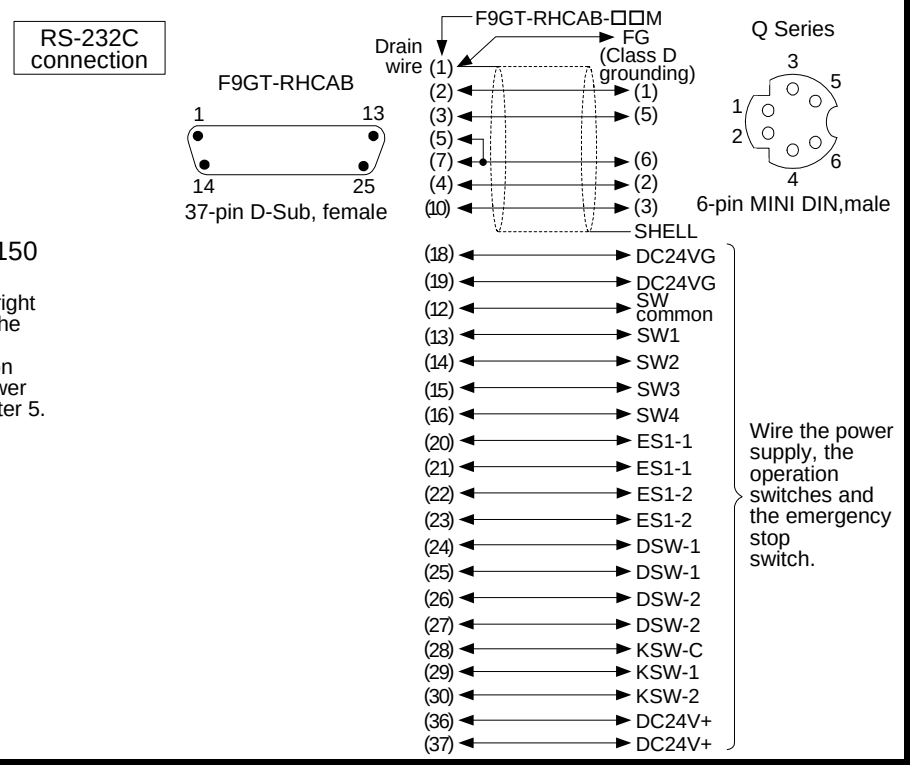
| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | F9GT-HCAB5-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-232C connection |  | Wire the power supply, the operation switches and the emergency stop switch. |

### 2) Cable for the Handy GOT (RH model) and the PLC

: Female type : Male type The connector figure shows the engagement face.

<table>
<tr><th>No.</th><th>Model name</th><th>Application</th><th>Connection diagram</th><th>Application</th></tr>
<tr><td>a)</td><td>F9GT-RHCAB-3M<br>F9GT-RHCAB-6M<br>F9GT-RHCAB-10M<br>RS-422 connection<br>RS-232C connection</td><td>Dedicated connector</td><td>The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user.</td><td>To F9GT-RHCAB2-150, F9GT-RHCAB3-150 or F9GT-RHCAB5-150<br>  <br><br>37-pin D-Sub, male</td></tr>
<tr><td>b)</td><td>F9GT-RHCAB2-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5.<br>RS-422 connection</td><td>  <br><br>37-pin D-Sub, female</td><td>  <br></td><td>FX0/FX0S/FX1S/FX0N/ FX1N/FX2N/FX2NC<br>  <br><br>8-pin MINI DIN,male</td></tr>
</table>

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| c) | F9GT-RHCAB3-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection |  | |
| d) | F9GT-RHCAB5-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-232C connection |  | |

# MEMO

# 6. Connection of Peripheral Equipment (Screen data transfer/Sequence program transfer and monitor)

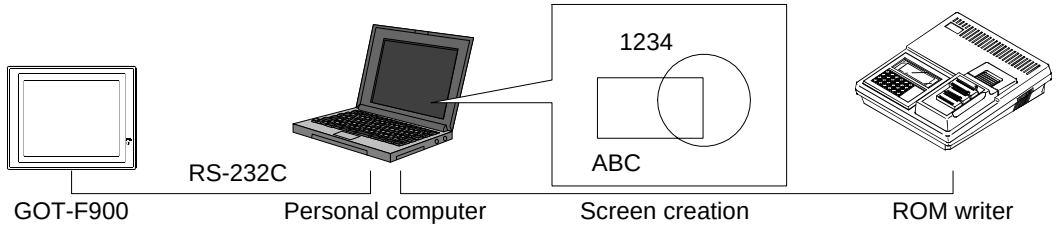
This chapter explains connection between the GOT-F900 and peripheral equipment.

## 6.1 Outline of Connection

The GOT-F900 and the peripheral equipment are connected as follows in accordance with each purpose. When a personal computer is connected, screen data transfer and sequence program transfer are executed in the same cable configuration.
The dedicated programming tool for the PLC is connected using the FX-2PIF.

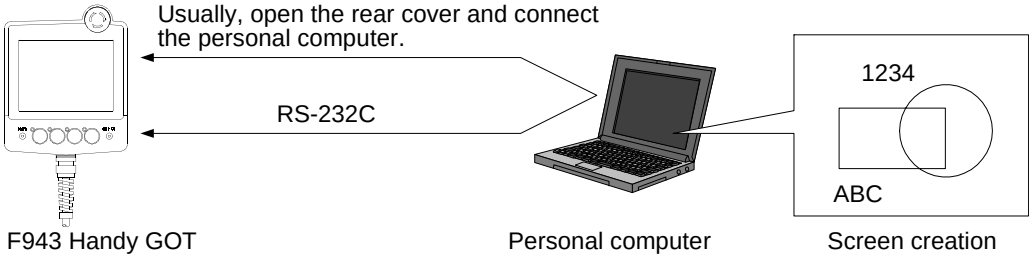
**Screen Creation**

**1) GOT ↔ Personal computer (screen creation software)** **Refer to 6.2.1.**




Connection when screen data transfer and OS transfer are executed between the GOT-F900 and the screen creation software installed in the personal computer

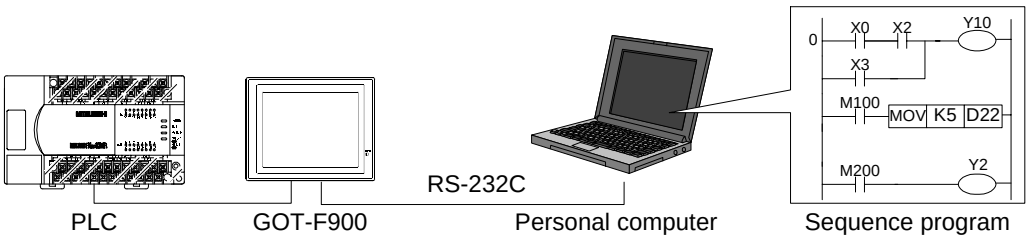
**2) F943 Handy GOT (PLC connector) ↔ Personal computer (screen creation software)Refer to 6.3.**




Connection when screen data transfer is executed while a personal computer is connected to the PLC port (RS-connected to the PLC port (RS-232C) of the F943 Handy GOT (This function is available only in the Handy GOT whose OS version is 6.00 or later.)

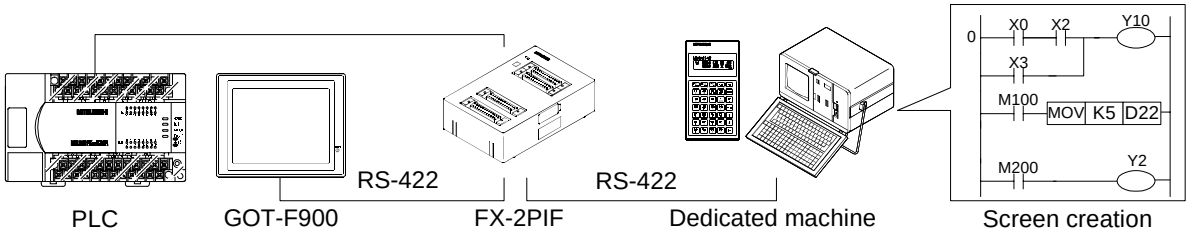
**Sequence Program**

**3) GOT ↔ Personal computer (sequence programming software)** **Refer to 6.2.2.**




Connection when sequence program transfer and monitoring are executed through the two-port interface built in the GOT-F900 between the PLC and the personal computer (Such operations can be performed while manipulating and displaying screens in the GOT-F900.)

**4) GOT ↔ FX-2PIF ↔ A6GPP/A7PHP/HPP** **Refer to Appendix.**

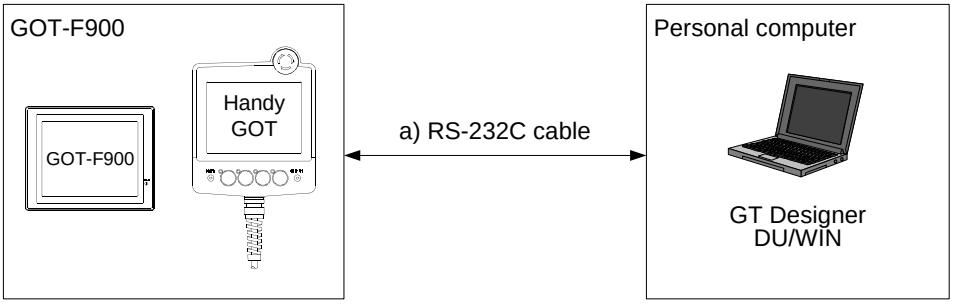



Connection when sequence program transfer and monitoring are executed while the GOT-F900 and the dedicated programming tool for PLC are connected to the FX Series and A Series PLC through the FX-2PIF. (Excluding the F920GOT-K and Handy GOT)

## 6.2 Connection to Personal Computer

This section explains the configuration when the created screen data and sequence programs (using the built-in two-port interface function) are transferred while a personal computer is connected to the RS-232C port of the GOT-F900.

### 6.2.1 Screen Data Transfer



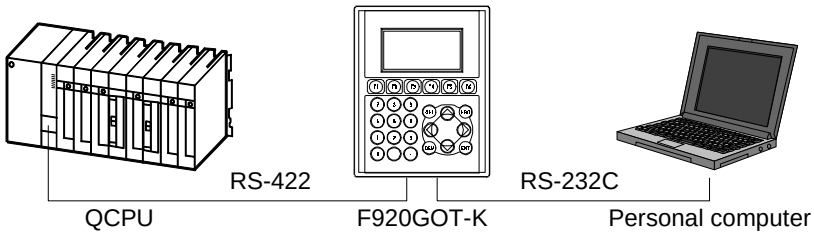

**1) Data transfer cable**

| a) RS-232C cable | Personal computer | |
|---|---|---|
| | | Port shape |
| FX-232CAB-1 | PC/AT compatible machine (DOS/V) | 9-pin D-Sub, female |

- The screen data and sequence program can be transferred using a same cable.

**Caution on use of F920GOT-K**

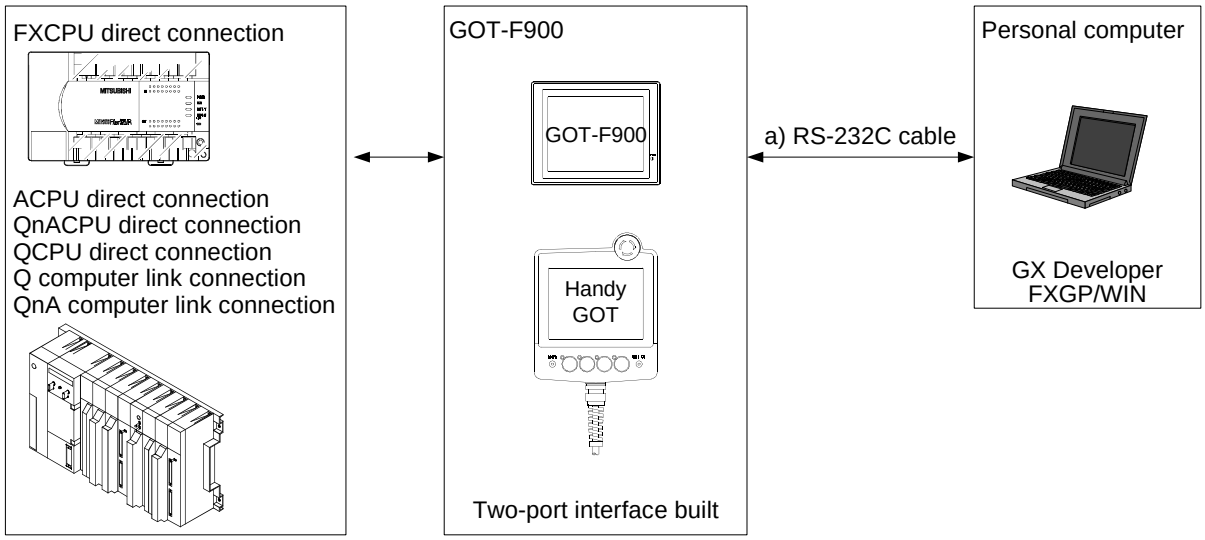
The F920GOT-K and the Q Series PLC (CPU direct connection) are connected via RS-232C ports. Therefore, a power cable needs to be prepared by the user when transferring screen data.




- Select a cable for connecting personal computers from the table above.
- The cable to connect QCPU units should be prepared by the user in reference to Cable Diagram in Chapter 11.
- For details, refer to Caution on Use of Peripheral Equipment described later.

### 6.2.2 Sequence Program Transfer (two-port interface function built)

Sequence program transfer and monitoring can be executed through the two-port interface function built in the GOT-F900.




The F920GOT-K can be used only in the FXCPU direct connection.

**1) Applicable PLC**

| Transferred data type | | Applicable PLC | |
|---|---|---|---|
| Sequence program transfer | F920GOT-K | FXCPU direct connection (RS-422 connection only) | |
| | Other than F920GOT-K | FXCPU direct connection<br>QnACPU direct connection<br>Q computer link connection | ACPU direct connection<br>QCPU direct connection<br>QnA computer link connection |

**2) Data transfer cable**

| a) RS-232C cable | Personal computer | |
|---|---|---|
| | | Port shape |
| FX-232CAB-1 | PC/AT compatible machine (DOS/V) | D-Sub 9-pin, female |

- The screen data and sequence program can be transferred using a same cable.

### 6.2.3 Cable Connection Procedure

This section explains the procedure to connect the GOT and a personal computer with a cable.

1. Connecting the cable to the personal computer

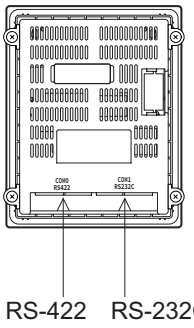
   Connect one side of the data transfer cable to the RS-232C interface port of the personal computer. (Select a proper data transfer cable in accordance with the port shape of the personal computer.)

2. Connecting the cable to the GOT

   The port used varies depending on the GOT model as follows.

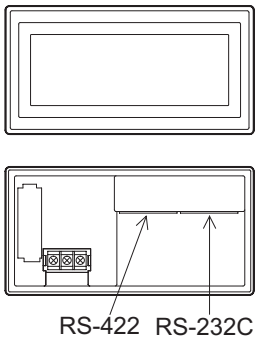
**1) F920GOT-K**

Connect the other side of the data transfer cable to the RS-232C port located in the right position seen from the rear face of the unit (figure on the right).



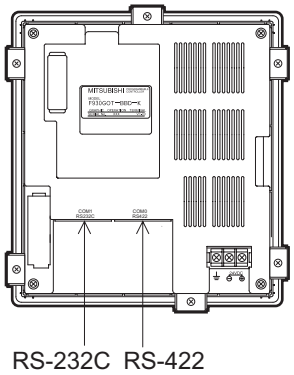

**2) F930GOT**

Connect the other side of the data transfer cable to the RS-232C port located in the right position seen from the rear face of the unit (figure on the right).



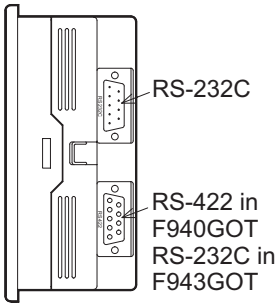

**3) F930GOT-K**

Connect the other side of the data transfer cable to the RS-232C port located in the left position seen from the rear face of the unit (figure on the right).



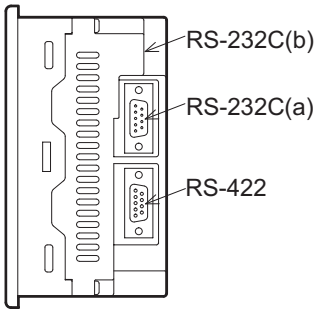

**4) F940GOT**

Connect the other side of the data transfer cable to the RS-232C port located in the upper position seen from the right side of the unit (figure on the right).



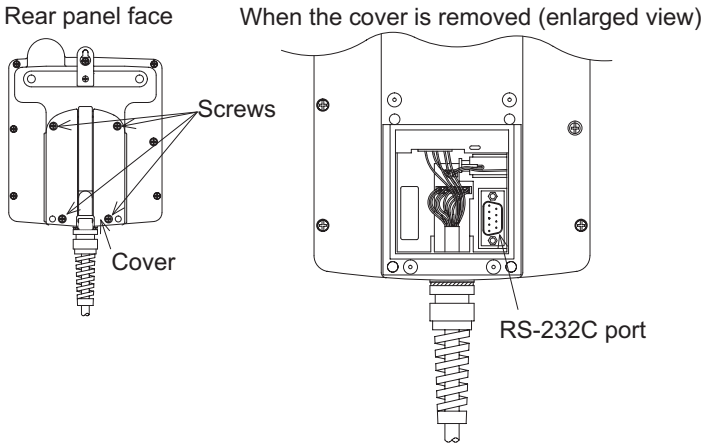
**5) F940WGOT**

Connect the other side of the data transfer cable to the RS-232C port (b) located in the upper position seen from the right side of the unit. The RS-232C port (a) is offered for the PLC. It is not available for a personal computer.




**6) Handy GOT**

The rear cover removal method is roughly explained below.




a) Remove the four mounting screws.
b) Open the rear cover.
c) Connect the other end of the data transfer cable to the 9-pin D-Sub (RS-232C) port.

## 6.3 Connection of F943 Handy GOT (for PLC) and Personal Computer

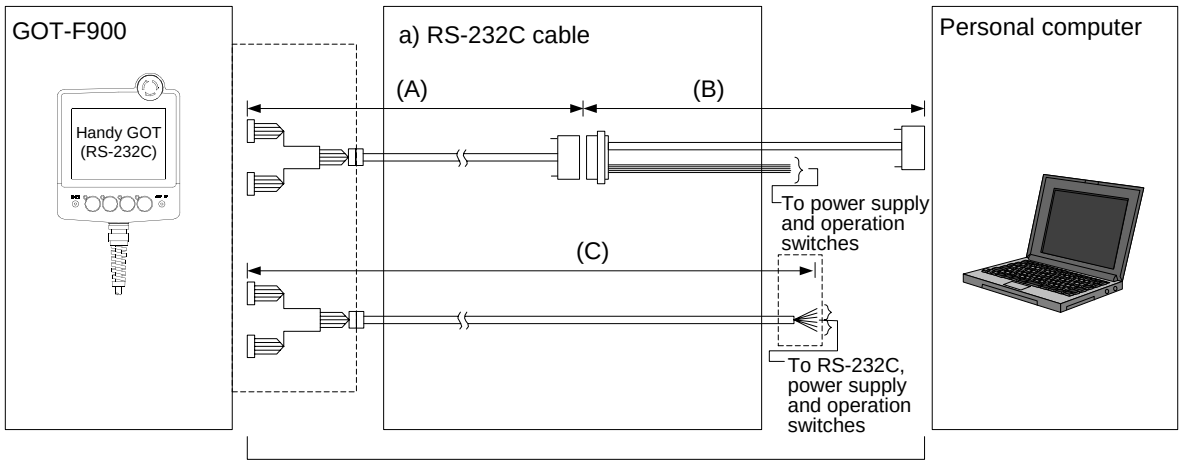
The F943 Handy GOT can transfer the screen data when a personal computer is connected using the cable shown below to the cable with an RS-232C connector for PLC.

**OS versions for the F943 Handy GOT**

Version 6.00 and later

If the OS version is former than earlier 6.00, remove the rear cover of the F943 Handy GOT, and connect the cable to the personal computer port. (Refer to section 6.2.)

### 6.3.1 When Screen Data is transferred through PLC Connector




**1) Data transfer cable**

| Cable for Handy GOT | Personal computer | | a) RS-232C cable |
|---|---|---|---|
| | | Port shape | |
| (A)F9GT-HCAB-☐☐M<br>(C)F9GT-HCAB1-☐☐M | PC/AT compatible machine (DOS/V) | 9-pin D-Sub, female | Prepared by user |

- As to the (C)F9GT-HCAB1-☐☐M, the user should attach an intermediate connector, and prepare a cable for PLC and a cable for personal computer.

### 6.3.2 Changeover of Connection between PLC and Personal Computer

For connecting a personal computer, the status of the PLC port of the F943 Handy GOT should be changed over from PLC connection to personal computer connection (screen data transfer) by the screen operation. The operations of the Handy GOT are explained below.

**1) Startup operation**

<When the OS version is 6.00 or later>
When the SELECT MODE screen change operation is disabled.

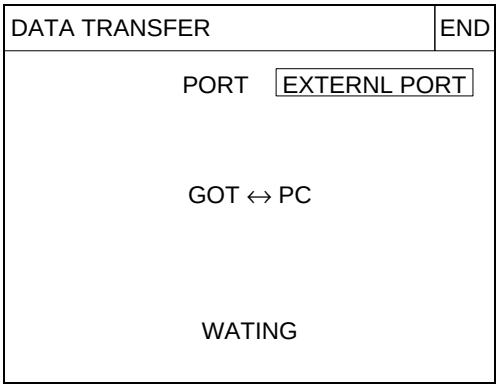
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "END" at the upper right corner. | The "SELECT MODE" screen appears. |
| c) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| d) Press "DATA TRANSFER" on the menu. | The "DATA TRANSFER" screen appears. |

When the main SELECT MODE change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "DATA TRANSFER" on the menu. | The "DATA TRANSFER" screen appears. |

**2) Screen operation**

When the "DATA TRANSFER" screen shown below appears, set "PORT" to "EXTERNAL PORT" by touching the screen.




| | | |
|---|---|---|
| PORT | EXTERNL PORT | Specifies the PLC connector. |
| | INTERNAL PORT | Specifies the personal computer port (RS-232C) provided on the rear face. |

When changing over the screen to a user screen after having transferred the screen data, "INTERNAL PORT" is automatically specified and communication with the PLC is enabled.

**3) Caution on use**

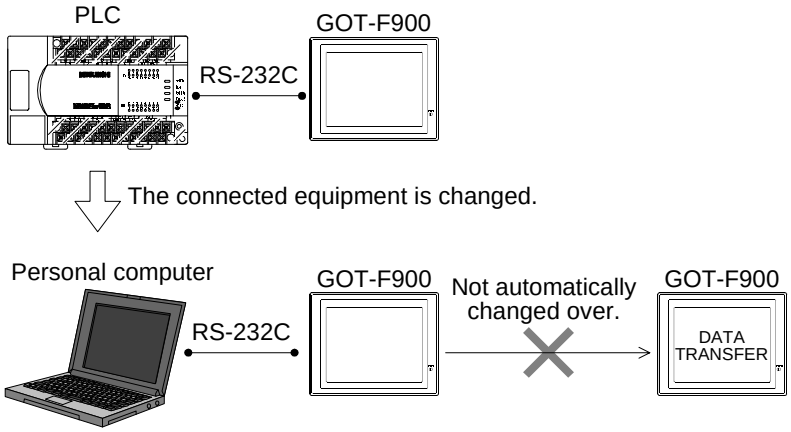
Though "PORT" is displayed also in the F940 Handy GOT, it is invalid because only RS-422 connection is available.

## 6.4 Caution on Use of Peripheral Equipment

When connecting a personal computer to the GOT in order to transfer screen data or sequence program or to monitor the personal computer, observe the following cautions on use.

### 6.4.1 Caution when connecting the GOT and PLC via RS-232C port (Only in case of the F920GOT-K, F930GOT, F930GOT-K, or F940GOT)

If the GOT-F900 (which is equipped with one RS-422 port and one RS-232C port) has already been set to connect with the PLC using the RS-232C port, the data transfer screen is not displayed automatically even when a personal computer is connected to the RS-232C port instead of the PLC (due to the RS-232C port priority).
To eliminate the inconvenience described below, it is recommended to use the GOT-F900 with two RS-232C ports. (Available only in certain models)




Follow the procedures below and changeover the screen manually from SELECT MODE to DATA TRANSFER in order to transfer screen data.

**Operating procedures**

1) **While pressing and holding the upper left corner of the screen, turn on the power. Keep holding for a while.**
2) **The "LANGUAGE" screen appears. Press "END".**
3) **The "SET-UP MODE" screen appears. Press "END"**
4) **The "SELECT MODE" screen appears. Press "OTHER MODE".**
5) **The "OTHER MODE" screen appears. Press "DATA TRANSFER".**
6) **Transfer screen data.**

**RS-232C port function priority**

The setting for the function with higher priority is confirmed first. If the function has been set, the one with lower priority is not executed.
For example, if a connected equipment (PLC) or bar code reader is set valid, screen data transfer or sequence program transfer and monitor is not enabled because those functions have lower priority as shown in the table.

| Rank order | RS-232C functions |
|---|---|
| 1 | Connected equipment (PLC, general-purpose equipment) |
| 2 | Bar code reader |
| 3 | Printer |
| 4 | 2-port interface function *1 |
| 5 | Screen data transfer mode |

*1 Available only in the FX, A, or QnA, Q Series CPU direct connection (including the QnA or Q serial communication).
However, when using the F920GOT-K, available only in the FX Series CPU direct connection.

### 6.4.2 Caution when transferring screen data to the F920GOT-K

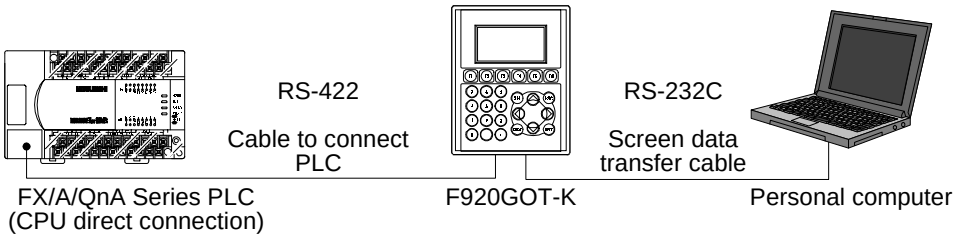
**Caution on Start-up**

- Never connect any cable other than a screen data transfer cable to the RS-232C port on the F920GOT-K when transferring screen data. Otherwise, it may cause critical damage to the F920GOT-K or connected equipment such as a PLC and personal computer.
- Do not connect the PLCs to the RS-232C port and RS-422 port on the F920GOT-K at the same time. Otherwise, consequential effect or damage may be caused to the F920GOT-K or PLCs.

When transferring screen data, make sure to connect to the PLC which is turned on in order to supply power to the F920GOT-K.

**In the case of the FX/A/QnA Series PLC CPU direct connection**

Connect the PLC to the RS-422 port.
When connecting the FX/A/QnA Series PLC, use the applicable RS-422 cables shown in the cable diagrams in Chapter 8, 9, and 10 respectively.
A personal computer is to be connected to the RS-232C port via a screen data transfer cable.

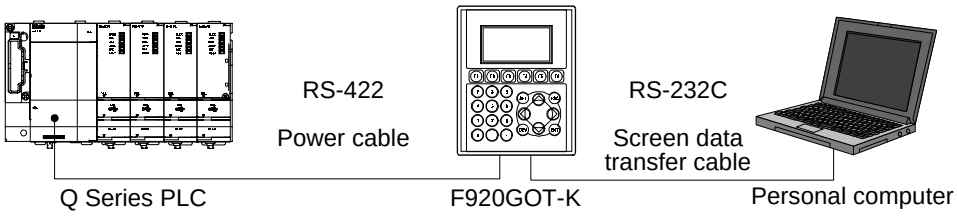



**In the case of the Q Series PLC CPU direct connection**

In order to execute data transfer between a personal computer and the GOT, they should be connected by a screen data transfer cable via RS-232C ports following the procedure below.
First, disconnect the data transfer cable between the Q Series PLC and the GOT. Second, connect the data transfer cable. Third, connect the PLC and the RS-422 port on the F920GOT-K using the power cable which is prepared by the user in reference to the cable diagram in Chapter 11. Then execute data transfer using the screen data transfer cable.

**1) When transferring screen data**

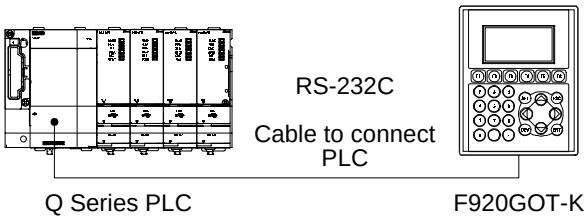
- Turn off the PLC.
- Connect the RS-232C port on the GOT and the personal computer using the data transfer cable.
- Connect the power cable to the RS-422 port.
  Execute the transfer after selecting DATA TRANSFER on a system screen.




Once screen data transfer is finished, make sure to turn off the PLC and disconnect the power cable before connecting the Q Series PLC to the RS-232C port of the GOT. Otherwise, it may cause critical damage to the connected equipment such as the F920GOT-K, PLC, or personal computer.

**2) When connecting to the PLC**

- Turn off the PLC.
- Disconnect the power cable used for screen data transfer.
- Connect a cable between the RS-232C ports of the F920GOT-K and QCPU.



## 6.5 Cable Diagram

This section explains the cable diagram when the GOT-F900 is connected to a personal computer.

### 6.5.1 Cable for Personal Computer

#### 1) Cable for the GOT and a personal computer

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | FX-232CAB-1 (RS-232C connection) | Personal computer connector<br>5 1<br>9 6<br>9-pin D-Sub, female | (2)→(2)<br>(3)→(3)<br>(6)→(6)<br>(8)→(8)<br>(5)→(5)<br>(4)→(4) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female |
| b) | F2-232CAB-1 (RS-232C connection) | Personal computer connector<br>1 13<br>14 25<br>25-pin D-Sub, male | (1) Shield<br>(2)→(2)<br>(3)→(3)<br>(5)→(8)<br>(6)→(4)<br>(7)→(5)<br>(20)→(6) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female |

#### 2) Cable the F943 Handy GOT and a personal computer (through the PLC connector)

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| c) | Prepared by user (RS-232C connection) | Personal computer connector<br>5 1<br>9 6<br>9-pin D-Sub, female | F9GT-HCAB-□□M<br>(2)→R(4)<br>(3)→BK(2)<br>(6)→GR(5)<br>(8)→BR(7)<br>(5)→O(10)<br>(4)→W(3)<br>F9GT-HCAB1-□□M | To cable F9GT-HCAB/F9GT-HCAB1 on Handy GOT side |
| d) | Prepared by user (RS-232C connection) | Personal computer connector<br>1 13<br>14 25<br>25-pin D-Sub, male | F9GT-HCAB-□□M<br>(2)→R(4)<br>(3)→BK(2)<br>(5)→BR(7)<br>(6)→W(3)<br>(7)→O(10)<br>(20)→GR(5)<br>F9GT-HCAB1-□□M | To cable F9GT-HCAB/F9GT-HCAB1 on Handy GOT side |

## 6.6 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to a personal computer.

### 1) GOT-F900

| Classification | Contents of trouble | Check points and countermeasures |
|---|---|---|
| GT Designer DU/WIN | When the screen data is transferred by the screen creation software, "No response from terminal", etc. is displayed. | The RS-232C port of the GOT-F900 is used by another connected equipment (bar code reader or printer).<br>• Causes<br>1)"RS-232C" is specified for PLC connection.<br>2)The bar code reader is set valid.<br>3)The printer is set valid.<br>Confirm the settings above in the screen creation software.<br>• Countermeasures<br>Select by hand the data transfer mode in the GOT-F900. Start up the system screen, display the "SELECT MODE" screen, select "OTHER MODE" - "DATA TRANSFER" on the menu, then transfer the screen data. |
| GOT-F900 | When the screen data is transferred by the screen creation software, the "DATA TRANSFER" screen does not appear in the GOT-F900. | |

**2) Program**

| Classification | Contents of trouble | Check points and countermeasures |
|---|---|---|
| GX Developer, FXGP/WIN or dedicated machine | Sequence program transfer/ monitoring is disabled. | The RS-232C port of the GOT-F900 is allocated to another connected equipment (bar code reader printer).<br><br>• Causes<br>1)"RS-232C" is specified for PLC connection.<br>2)The bar code reader is set valid.<br>3)The printer is set valid.<br>Confirm the settings above in the screen creation software.<br><br>• Countermeasures<br>Against 1), set PLC connection to RS-422. Or select a model equipped with two built-in RS-232C ports (such as the F943GOT-SBD-H).<br>Against 2) and 3), Change the setting in the screen creation software. |
| | | The sequence programming tool (dedicated machine) is connected to the RS-422 port of the GOT-F900.<br><br>• Cause<br>The sequence programming tool (dedicated machine) cannot be connected to the RS-422 port of the GOT-F900.<br><br>• Countermeasures<br>Only a personal computer can be connected to the RS-232C port. (The dedicated machine can be connected using the two-port interface FX-2PIF.) |
| GX Developer only | When transfer is executed by the GX Developer, a communication error sometimes occurs. | The GOT-F900 does not support the GX Developer (only in the initial version of the F940GOT).<br><br>• Cause<br>The version of the GOT-F900 is earlier than 1.00 and does not correspond to the GX Developer.<br><br>• Countermeasures<br>Check the OS version of the GOT-F900, and upgrade the OS. |

# 7. Connection of Two or More GOT Units

This chapter explains the setting method, the cable connection diagram and cautions when two or more GOT units are connected.

**Connection Procedure**

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 7.1 |
| System Configuration for Two or More GOT Units | You can select the GOT configuration and proper cables. | 7.2 |
| Rules in Configuration | You can learn the connection procedure in accordance with the specifications of the interface built in the GOT. | 7.3 |
| Connection of Four or More Display Units | This section introduces connection of two or more GOT units and the means to use satisfactorily the peripheral equipment for PLC. | 7.4 |
| Cautions on Connecting Two or More GOT Units | You can learn the restrictions in connecting two or more GOT units. | 7.5 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting of Connected Equipment for GOT | You can set the connection type (RS-232C/RS-422) of the second and later GOT units. | 7.6 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for two or more GOT unit connection. | 7.7 |
| Troubleshooting | Description of errors and how to fix them. | 7.8 |

## 7.1 System Condition

When connecting two or more GOT units, check the COM port designation, the OS version of the GOT-F900 and applicable version of the screen creation software.
Have in mind that connection may not be allowed if the connected PLC (FX/A/QnA/Q Series PLC or microcomputer) is the CPU direct connection type or the OS version of the GOT-F900 Series does not match.
For OS version compatible with Q multiple PLC system, refer to Chapter 11.

| GOT-F900Series | COM port to which GOT can be connected | | OS version of GOT-F900 | | | | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | FXCPU | ACPU | QnACPU | QCPU | Microcomputer |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | ✓ | 1.00 | 1.00 | 2.00 | 2.20 | 3.00 |
| F930GOT-K | ✓ | ✓ | 4.60 | 4.60 | 4.60 | 4.60 | 4.60 |
| F940GOT | ✓ | ✓ | 1.00 | 1.00 | 3.00 | 4.10 | 5.00 |
| F940WGOT | ✓ | ✓ | | | | | |
| F940 Handy GOT | ✓ *1 | – | | | | | |
| F943 Handy GOT | – | ✓ *1 | | | | | |
| Screen creation software | GT Designer | | SW-1A | SW-1A | SW-2A | SW-4F | SW-1A |
| | DU/WIN | | 2.00 | 2.00 | 2.30 | 2.40 | 2.00 |

*1 Only one Handy GOT unit can be connected at the end.

## 7.2 Connection Configuration for Two or More GOT Units

When connecting two or more GOT-F900 units, for the first GOT-F900 unit, refer to the connection method for each equipment (FX/A/QnA/Q Series PLC and microcomputer) in this manual. This section explains cables required to connect among the second and later GOT units.

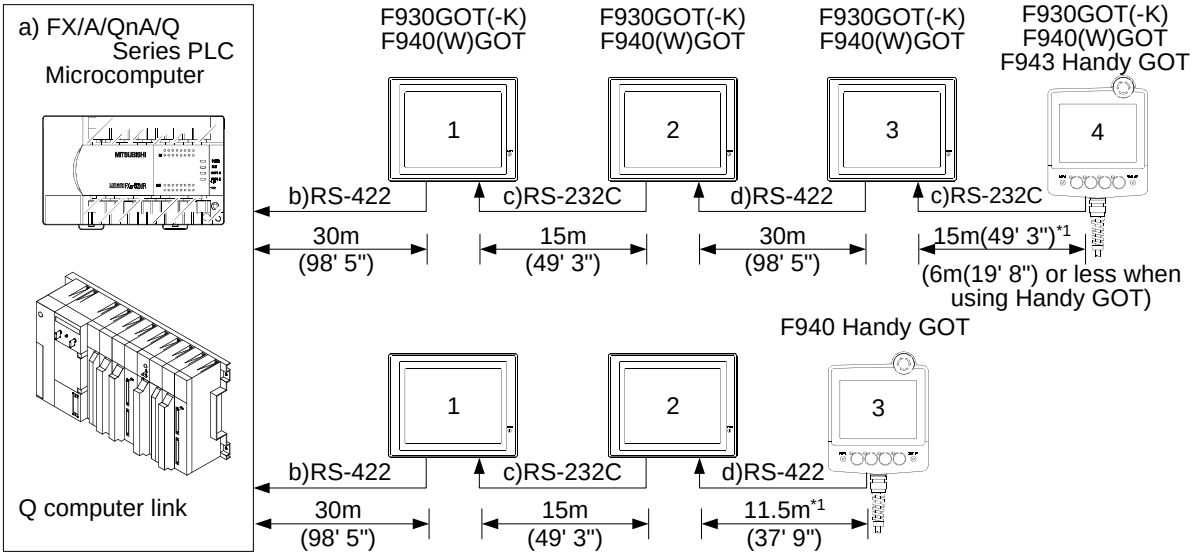
**Handling of the Handy GOT**

Only one Handy GOT unit can be connected at the end. (Up to four GOT units can be connected in total including one Handy GOT unit).

### 7.2.1 Configuration When First GOT Unit is Connected through RS-422

This section explains the configuration when the first GOT-F900 is already connected through RS-422.

- The configuration of the first unit is as shown in the table below. For the details, however, refer to section explaining each connected equipment also.




*1 For the length of the Handy GOT cable, refer to chapter 5.

**1) F930GOT, F930GOT-K, F940GOT and F940WGOT**

| a) FX/A/QnA/Q Series PLC, microcomputer | b) RS-422 cable | c) RS-232C cable | d) RS-422 cable |
|---|---|---|---|
| FX/FX1/FX2/FX2C (CPU direct connection) (25-pin D-Sub) | FX-40DU-CAB<br>FX-40DU-CAB-□□M<br>FX-50DU-CABL | FX-232CAB-1 | Prepared by user (cross cable) |
| A/QnA (CPU direct connection) (25-pin D-Sub) | | | |
| FX0/FX0S/FX1S/FX0N/ FX1N/FX2N/FX1NC/FX2NC (CPU direct connection) (8-pin MINI DIN) | FX-50DU-CAB0<br>FX-50DU-CAB0/EN<br>FX-50DU-CAB0-□□M<br>FX-50DU-CAB0L | FX-232CAB-1 | Prepared by user (cross cable) |
| FX1S + FX1N-422-BD<br>FX1N + FX1N-422-BD<br>FX2N + FX2N-422-BD<br>(8-pin MINI DIN) | | | |
| QnA computer link connection | Prepared by user | FX-232CAB-1 | Prepared by user (cross cable) |
| Q computer link connection | Prepared by user | FX-232CAB-1 | Prepared by user (cross cable) |
| Microcomputer connection | Prepared by user | FX-232CAB-1 | Prepared by user (cross cable) |

- Among RS-422 cables in the FX-50DU-CABL and the FX-50DU-CAB0L cannot be used in the F930GOT/ F930GOT-K.

**2) Handy GOT**

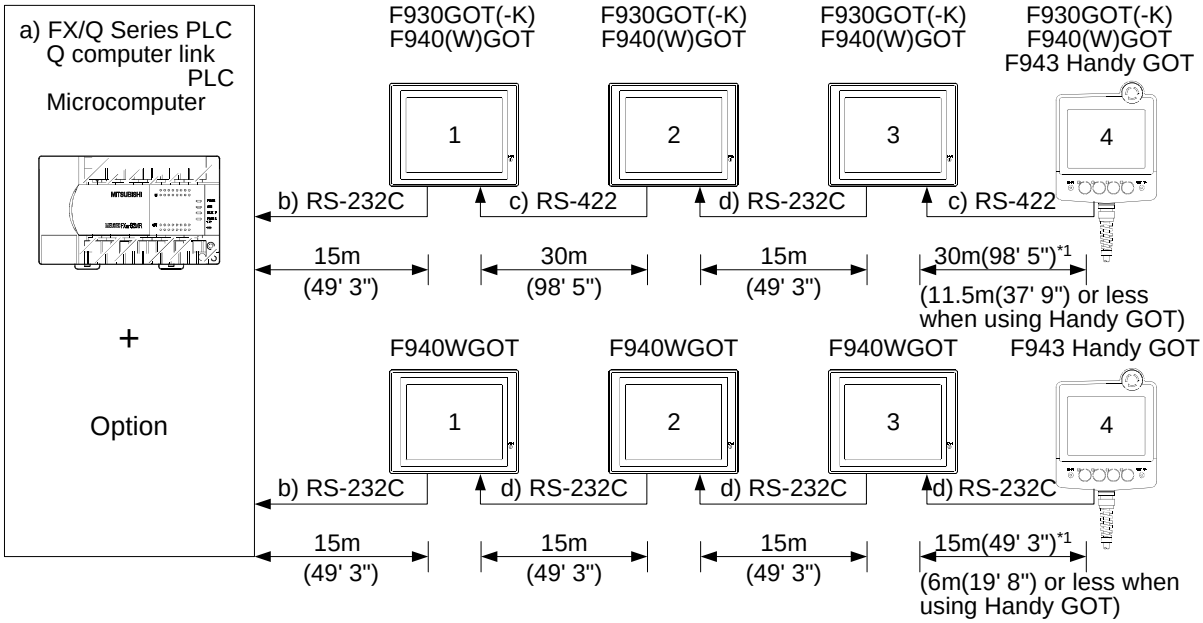
Connection of the Handy GOT is as shown below: It is different from the cables shown in the previous page.

| Connected signal | Connectable Handy GOT | Cable |
|---|---|---|
| c) RS-422 | F940 Handy GOT | Prepare another cable connecting the 25-pin D-Sub connector of the F9GT-HCAB-☐☐M.<br>Or connect the untied side of the F9GT-HCAB1-☐☐M. |
| d) RS-232C | F943 Handy GOT | |

### 7.2.2 When First GOT Unit is Connected through RS-232C

This section explains the configuration when the first GOT-F900 is already connected to some equipment (FX/Q Series PLC or microcomputer) through RS-232C.

- The configuration of the 1st unit is as shown in the table below. For the details, refer to section explaining each connected equipment also.




*1 For the length of the Handy GOT cable, refer to chapter 5.

#### 1) F930GOT, F930GOT-K, F940GOT and F940WGOT

| a) FX/Q Series PLC | b) RS-232C cable | c) RS-422 cable | d) RS-232C cable |
|---|---|---|---|
| FX1S + FX1N-232-BD<br>FX1N + FX1N-232-BD<br>FX2N + FX2N-232-BD<br>(9-pin D-Sub, male) | FX-232CAB-1 | Prepared by user<br>(cross cable) | FX-232CAB-1 |
| FX1S + FX1N-CNV-BD + FX0N-232ADP<br>FX1N + FX1N-CNV-BD + FX0N-232ADP<br>FX2N + FX2N-CNV-BD + FX0N-232ADP<br>(25-pin D-Sub, female) | F2-232CAB-1 | | |
| FX2NC + FX0N-232ADP<br>FX1NC + FX0N-232ADP<br>(25-pin D-Sub, female) | | | |
| QCPU(CPU direct connection)<br>(6-pin MINI DIN) | QC30R2 | | |
| QnA computer link connection | Prepared by user | | |
| Q computer link connection | Prepared by user | | |
| Microcomputer connection | Prepared by user | Prepared by user | Prepared by user |

#### 2) Handy GOT

Connection of the Handy GOT is as shown below: It is different from the cables shown in the table above.

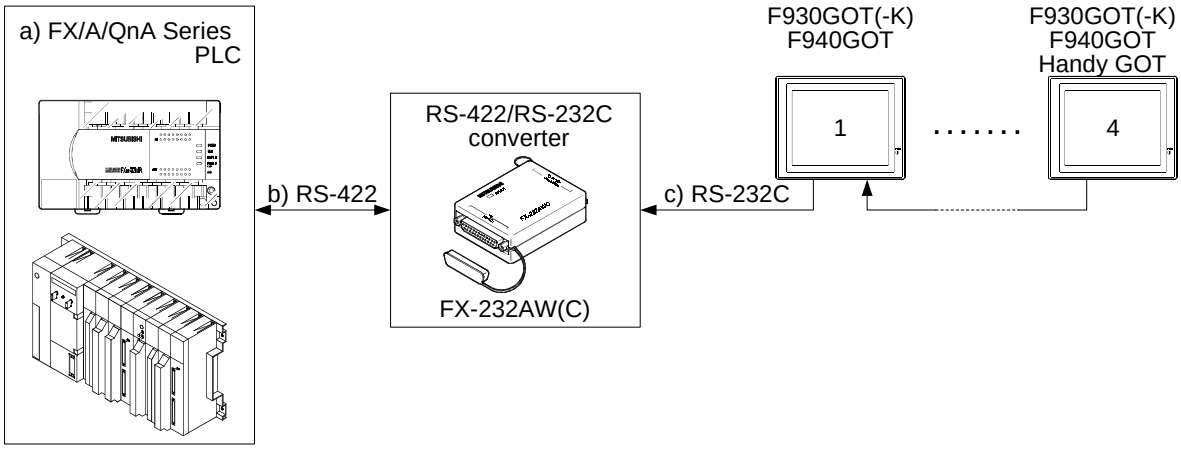
| Connected signal | Connectable Handy GOT | Cable |
|---|---|---|
| c) RS-422 | F940 Handy GOT | Prepare another cable connecting the 25-pin D-Sub connector of the F9GT-HCAB-□□M.<br>Or connect the untied side of the F9GT-HCAB1-□□M. |
| d) RS-232C | F943 Handy GOT | |

### 7.2.3 When Connection is Changed from RS-422 to RS-232C

This section explains the method to change connection from RS-422 to RS-232C using the FX-232AW(C) RS-422/RS-232C converter when the connected equipment (FX/A/QnA Series PLC) is the RS-422 type.

- The configuration of the 1st unit is as shown in the table below. For the details, however, refer to chapter explaining each connected equipment also.

#### 1) When the FX-232AW(C) is used




| a) FX/A/QnA Series PLC | | b) RS-422 cable | c) RS-232C cable |
|---|---|---|---|
| FX/FX1/FX2/FX2C (CPU direct connection) | 25-pin D-Sub | FX-422CAB | F2-232CAB-1 |
| A,QnA(CPU direct connection) | | | |
| FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC (CPU direct connection) | 8-pin MINI DIN | FX-422CAB0 | F2-232CAB-1 |
| FX1S + FX1N-422-BD<br>FX1N + FX1N-422-BD<br>FX2N + FX2N-422-BD | | | |

## 7.3 Rules in Configuration

The GOT-F900 is equipped with two or more built-in serial communication connectors. Through alternate connection, up to four GOT-F900 units can be connected.
This section explains the rules in configuration through alternate connection.

### 7.3.1 Connection Method

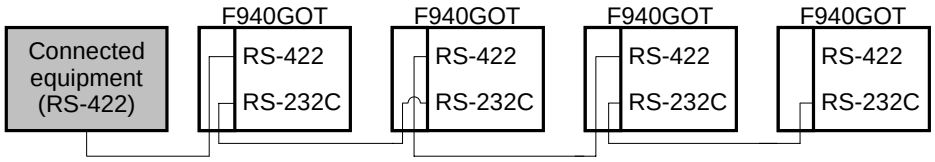
By using the two-channel serial communication function built in the GOT, two or more GOT units can be connected alternately (daisy chain connection).

**1) Connection condition**

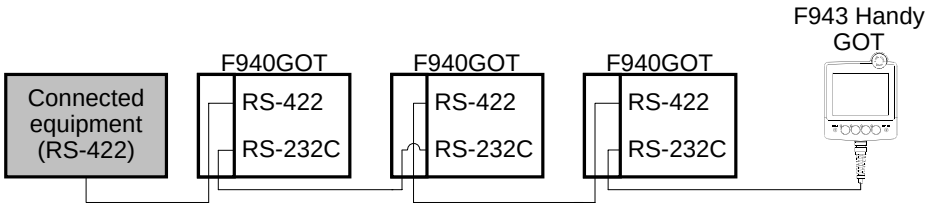
Two or more GOT units can be connected to the following equipment.

- The CPU of the FX/A/QnA/Q Series PLC
- The QnA/Q Series serial communication unit
- A personal computer or microcomputer board

**2) Example of connection using F940GOT units**

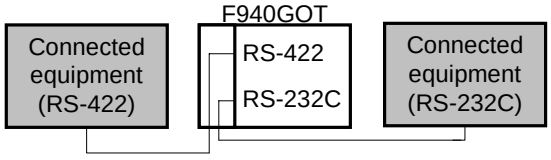



**3) Example of connection including a Handy GOT unit**

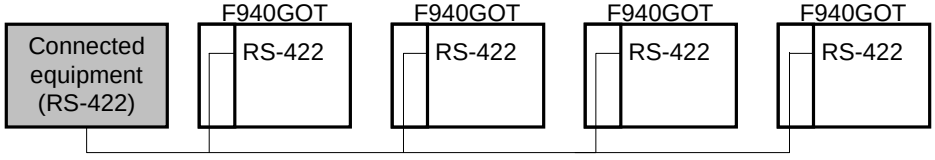



In RS-422 connection, one F940 Handy GOT unit can be connected.

**4) Example of unallowable connection**




Only one equipment can be connected to one GOT unit.




The "1:N" link connection with RS-422/485 is not allowed.

### 7.3.2 Communication Port Number Table

The GOT-F900 Series is equipped with built-in serial interfaces as shown below.

| GOT-F900 | COM0 | COM1 | COM2 | Remarks |
|---|---|---|---|---|
| F940WGOT | RS-422 | RS-232C | RS-232C | Three channels are built in. |
| F940GOT<br>F930GOT-K<br>F930GOT | RS-422 | RS-232C | Not provided | Two channels are built in. |
| F940 Handy GOT | RS-422 | Not provided | Not provided | One channel is built in (one RS-232C channel for personal computer connection). |
| F943 Handy GOT | RS-232C | Not provided | Not provided | One channel is built in (one RS-232C channel for personal computer connection). |

### 7.3.3 Connection Concept in Each Model Name

**1) F940WGOT**

When the RS-422 (COM0) port is used to connect the PLC, connect the next GOT-F900 to the RS-232C (either COM1 or COM2) port. When the RS-232C (COM1) port is used to connect the PLC, connect the next GOT-F900 to the RS-422 (COM0) or RS-232C (COM2) port.

| PLC connection side | To next GOT | Remarks |
|---|---|---|
| RS-422(COM0) | RS-232C (either COM1 or COM2) | |
| RS-232C(COM1) | RS-422(COM0) | |
| RS-232C(COM1) | RS-232C(COM2) | |

**2) F930GOT/F930GOT-K/F940GOT**

When the RS-422 (COM0) port is used to connect the PLC, connect the next GOT-F900 to the RS-232C (COM1) port.
When the RS-232C (COM1) port is used to connect the PLC, connect the next GOT-F900 to the RS-422 (COM0).

| PLC connection side | To next GOT | Remarks |
|---|---|---|
| RS-422(COM0) | RS-232C (either COM1 or COM2) | |
| RS-232C(COM1) | RS-422(COM0) | |
| RS-232C(COM1) | RS-232C(COM2) | |

**3) Handy GOT**

Only one Handy GOT unit can be connected at the end of two or more GOT units. After the Handy GOT, no GOT-F900 can be connected.

| PLC connection side | To next GOT | Remarks |
|---|---|---|
| RS-422(COM0) | Can not connect *1 | In the case of F940 Handy GOT |
| RS-232C(COM0) | | In the case of F943 Handy GOT |

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

## 7.4 Connection of Four or More Display Units

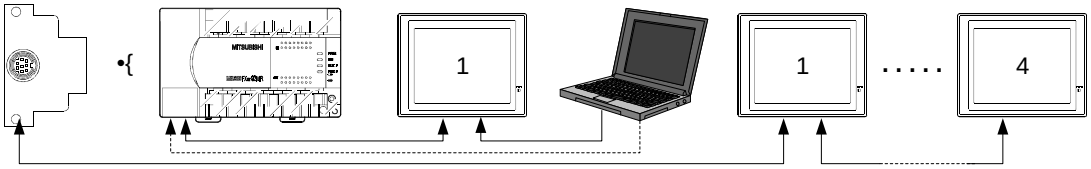
When satisfactory operation, program transfer at high speed and monitor response are required through connection of peripheral equipment for the PLC (dedicated equipment or personal computer) while two or more (sometimes wore than four) GOT units are connected, the following configurations are recommended.

**1) Adding a programming port using an option**

In the FX1S/FX1N/FX2N/FX2NC Series, one programming port can be added by installing an option. By this method, prepare a port to connect a peripheral equipment for the PLC (display unit) and a port to connect a display unit.

| Applicable PLC | Signal name | Optional model name |
|---|---|---|
| FX1S/FX1N Series | RS-422 | FX1N-422-BD |
| | RS-232C | FX1N-232BD or FX1N-CNV-BD + FX0N-232ADP |
| FX2N Series | RS-422 | FX2N-422-BD |
| | RS-232C | FX2N-232BD or FX2N-CNV-BD + FX0N-232ADP |
| FX2NC Series | RS-232C | FX0N-232ADP |

[Configuration example] FX2N-422-BD + FX2N Series



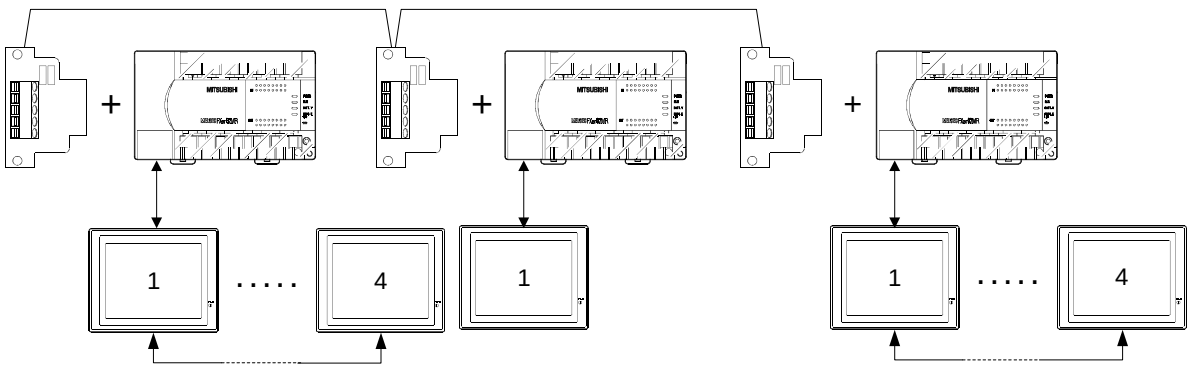

**2) Using the PLC easy link function**

The PLC easy link function enables to connect up to eight FX1S/FX0N/FX1N/FX2N/FX1NC/FX2NC Series PLC units. To each PLC unit, GOT-F900 units can be connected.

| Applicable PLC | Model name | Total PLC extension distance |
|---|---|---|
| FX0N Series | FX0N-485ADP | 500m (1640') |
| FX1S/FX1N Series | FX1N-485-BD | 50m (164') |
| | FX1N-CNV-BD + FX0N-485ADP | 500m (1640') |
| FX2N Series | FX2N-485-BD | 50m (164') |
| | FX2N-CNV-BD + FX0N-485ADP | 500m (1640') |
| FX1NC/FX2NC | FX0N-485ADP | 500m (1640') |

- When the FX1N/FX2N-485BD is included in the system, the total extension distance is 50m (164').

[Configuration example] FX2N-485-BD + FX2N Series



## 7.5 Cautions on Connecting Two or More GOT Units

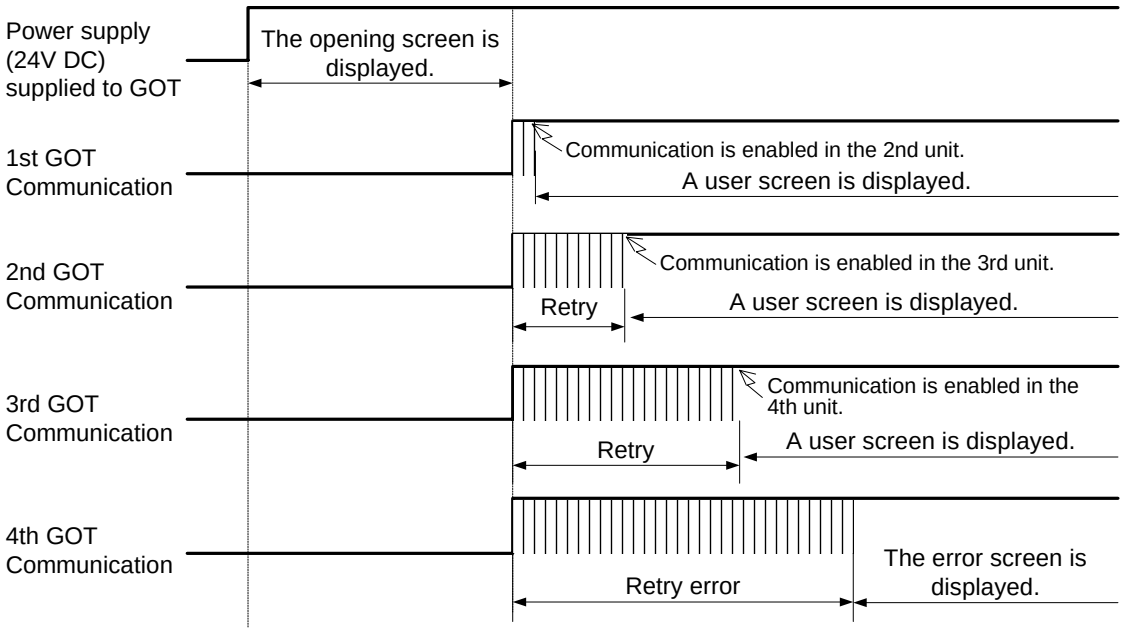
This section explains the cautions on use of two or more connected GOT units.

### 7.5.1 Power ON Sequence

When connecting two or more GOT units, confirm the model of the connected equipment (FX/A/QnA/Q Series PLC, microcomputer) by executing communication in turn from the first GOT-F900 unit (1st GOT-F900 → 2nd GOT-F900 → 3rd GOT-F900 → 4th GOT-F900).
For example, if the power is turned on in the 1st and 4th GOT-F900 units, then turned on in the 2nd and 3rd GOT-F900 units after a while, a communication error occurs in the 4th GOT-F900 unit.
And even when the power is turned on in four GOT-F900 units at the same time, if communication starts as soon as the opening screen is displayed in the GOT units and it takes considerable time until communication is enabled in the 4th GOT-F900 unit, a communication error may occur.

**1) Communication timing**

If communication is aborted for some reason, it is retried. If communication is not executed in the specified judgement time, a communication error occurs.


Power supply (24V DC) supplied to GOT
The opening screen is displayed.
1st GOT Communication
Communication is enabled in the 2nd unit.
A user screen is displayed.
2nd GOT Communication
Communication is enabled in the 3rd unit.
Retry
A user screen is displayed.
3rd GOT Communication
Communication is enabled in the 4th unit.
Retry
A user screen is displayed.
4th GOT Communication
Retry error
The error screen is displayed.

**2) Countermeasures**

To prevent communication errors, the communication start timing in the GOT-F900 should be delayed using the following method.

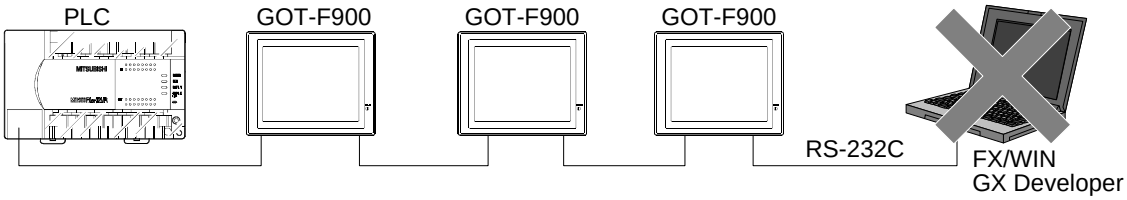
a) Delay the timing of turning on the power of the GOT-F900 and the connected equipment (FX/A/QnA/Q Series PLC, microcomputer).
Set the sequence to "connected equipment → 1st GOT unit → 2nd GOT unit → 3rd GOT unit → 4th GOT unit".

b) While the opening screen is being displayed, communication is not executed.
Accordingly, adjust the opening screen display time to delay the communication start timing.
Change the title screen display time on the "SET-UP MODE" screen in the GOT or in the screen creation software.
1st GOT unit (default value) → 2nd GOT unit (default value + 5 sec) → 3rd GOT unit (default value + 10 sec) → 4th GOT unit (default value + 15 sec)

### 7.5.2 Transfer of sequence program and use of monitor

This section explains the restriction on sequence program transfer and device monitoring through a personal computer connected to a GOT unit while two or more GOT units are connected. (Excluding microcomputer connection)

**1) When a personal computer is connected to the last GOT unit**

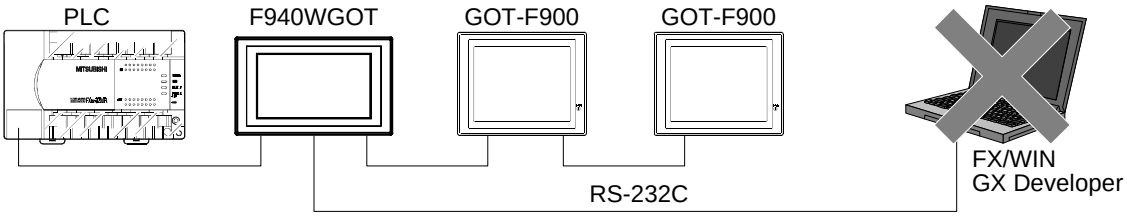



Even if there is an unused RS-232C connector in the last connected GOT unit, connection and use of a personal computer are disabled for the following reasons.

a) Because the response is slow during device monitoring, this connection cannot be recommended for practical use.

b) Because the communication time is long during program transfer or monitoring, a communication error may occur in the software installed in the personal computer.

**2) When a personal computer is connected to the F940WGOT**




The F940WGOT is equipped with 2 channels of RS-232C connectors. However, if the F940WGOT is connected to a GOT unit and a personal computer at the same time, sequence program transfer and monitoring are disabled.

The two-port interface function is available only for either the function to connect two or more GOT units or the program transfer/monitoring function. (Use of these two functions at the same time is not allowed.)

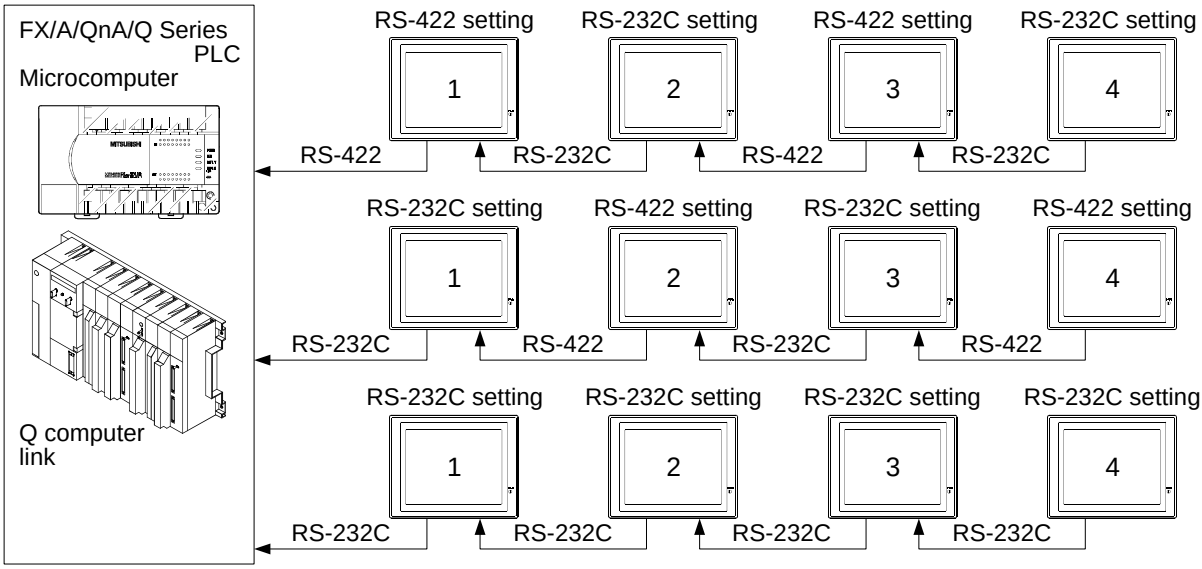
## 7.6 Setting of Connected Equipment for GOT

Connection of two or more GOT units can be set in the GOT-F900 Series and the screen creation software GT Designer and DU/WIN.

### 7.6.1 Connection Type (RS-422/RS-232C setting)

**1) Using the screen creation software, specify the connected PLC type (such as the FX Series) to all GOT-F900 units.**

**2) In each GOT-F900 unit, the communication port should be set to RS-422 or RS-232C.**
**For example, suppose that four GOT-F900 units are connected to the RS-422 port of the FX Series PLC.**
**In every GOT-F900 unit, set the PLC type to the FX Series.**
**In the 1st and 3rd GOT-F900 units, set the communication port to RS-422.**
**In the 2nd and 4th GOT-F900 units, set the communication port to RS-232C.**




### 7.6.2 Station Number Setting

Set the station number to "00" in every GOT-F900 unit.
In the case of microcomputer connection, however, set a value other than 00.
In connection of two or more GOT units from the microcomputer, the value set to the station number can be specified by the communication commands for identification. (If the station number is set to "00", the function to connect two or more GOT units is disabled, and communication is executed using the conventional communication commands.)

| Connection | Connected PLC | Station number | Remarks |
|---|---|---|---|
| FXCPU | FX Series | 00 | |
| ACPU | A Series | 00 | |
| QnACPU | QnA/Q Series | 00 | |
| QCPU | | 00 | |
| QnA computer link | | 00 | |
| Q computer link | | 00 | |
| Microcomputer | General-purpose communication | Other than 00 *1 | Different value in range from 01 to 31 |

*1 In the case of microcomputer connection, set the station number in the range from 01 to 31 while making sure that a same value is not assigned to two or more GOT-F900 units. If the station number is set to "00", the microcomputer and the GOT-F900 are connected on the "1:1" basis, and the function to connect two or more GOT units is disabled.

### 7.6.3 Setting Procedure

#### 1) GOT-F900 Series

When the SELECT MODE screen change operation is disabled.

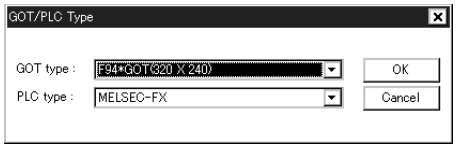
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br><br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE: FX SERIES<br>A SERIES<br>QnA, Q SERIES<br>Q (MULTI) SERIES<br>UNIVERSAL<br>CONNECTION: CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 (01 to 31 for microcomputer connection)<br>GOT STATION # (-) :– | |

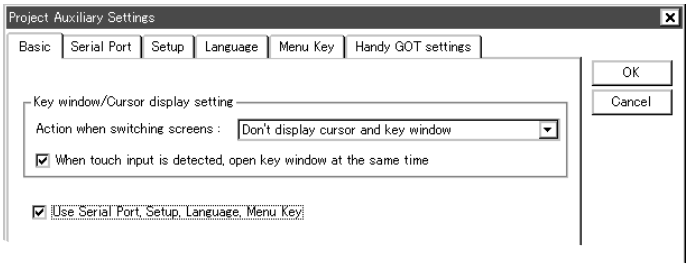
When the SELECT MODE screen change operation is enabled.

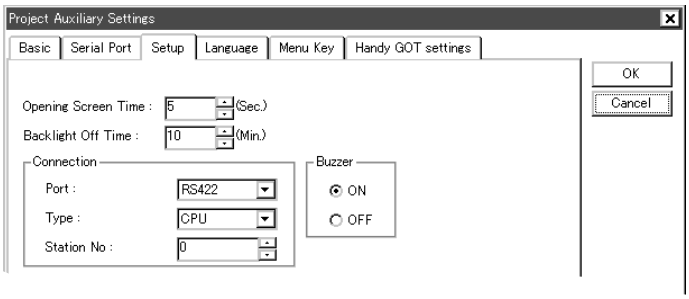
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: FX SERIES<br>A SERIES<br>QnA, Q SERIES<br>Q (MULTI) SERIES<br>UNIVERSAL<br>CONNECTION: CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 (01 to 31 for microcomputer connection)<br>GOT STATION # (-) :– | |

- Be aware that when the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open GT Designer.<br><br>b) Click the [NEW] button.<br> 

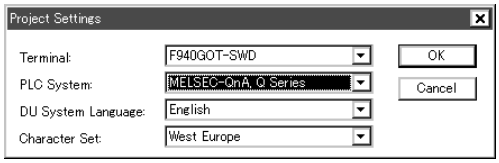
<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234)<br>F940GOT (320 × 240)<br>F930GOT (240 × 80)<br>PLC type: MELSEC-FX<br>MELSEC-A<br>MELSEC-QnA, Q<br>MELSEC-Q (Multi)<br>Computer<br>Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F940GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F930GOT(240×80)</td><td>F930GOT<br>F930GOT-K</td></tr>
</table>
Click [OK].<br><br>d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

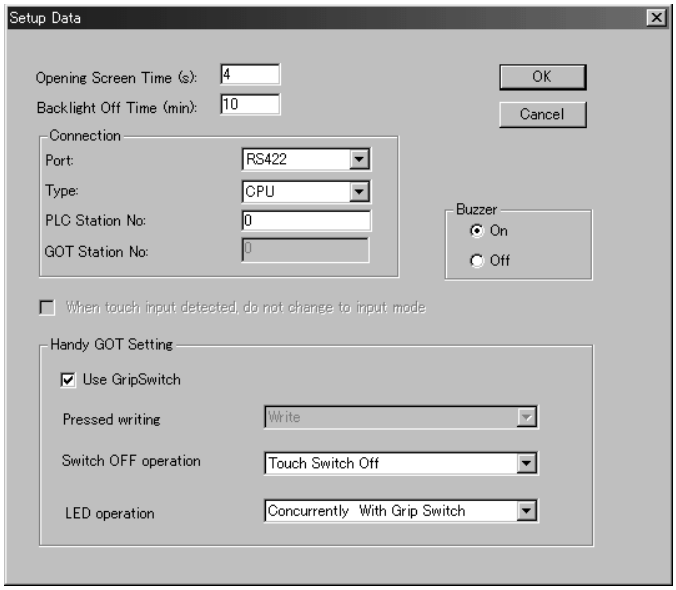
<br>Click the "Setup" tab.<br> 

</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears.</td></tr>
<tr><td></td><td>In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.</td><td></td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| RS-422 connection | e) Set the following.<br>Port : RS-422<br>Type : CPU<br>DST Station No. (Station No.) : 00 (01 to 31 for microcomputer connection)<br>GOT Station No. (-) : – | The "Setup Data" dialog box appears. |
| RS-232C connection | e) Set the following.<br>Port : RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 00 (01 to 31 for microcomputer connection)<br>GOT Station No. (-) : – | The "Setup Data" dialog box appears. |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br>The "GOT/PLC Type" dialog box appears. |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br>b) On the menu, select "File"-"New".<br> 

c) Set the following.<br>Terminal: F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: MELSEC-FX<br>MELSEC-A<br>MELSEC-QnA, Q<br>General<br>Select "Terminal" in accordance with the LCD display color.
<table>
<tr><th>DU type</th><th>Model name</th></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table></td><td>The "Project settings" dialog box appears.</td></tr>
<tr><td>RS-422 connection</td><td>d) Set CPU direct connection (RS-422) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

e) Set the following.<br>Port: RS-422<br>Type: CPU<br>DST Station No. (Station No.): 00 (01 to 31 for microcomputer connection)<br>GOT Station No. (-) : –</td><td>The "Setup Data" dialog box appears.</td></tr>
</table>

| | Operation | Display (screen name) |
|---|---|---|
| RS-232C connection | d) For selecting RS-232C of the GOT-F900, select "View/Project"-"System Settings"-"Setup Data" on the menu.<br>e) Set the following.<br>Port: RS-232C<br>Type: CPU<br>DST Station No. (Station No.) : 00 (01 to 31 for microcomputer connection)<br>GOT Station No. (-) : – | The "Setup Data" dialog box appears. |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed. | The "Open" dialog box appears. |
| | d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For setting of RS-232C/RS-422 of the FX Series, refer to d) in [Creation] above. | The "Project settings" dialog box appears. |

## 7.7 Cable Diagram

This section explains cable diagrams to connect the 1st and later GOT-F900 units.

### 1) Cable for the GOT and the GOT (in connection of two or more GOT units)

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>Connection of two or more GOT units<br>Prepared by the user | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(1)<br>(2)–(2)<br>(3)–(3)<br>(4)–(4)<br>(5)–(5)<br>(6)–(6)<br>(7)–(7)<br>(8)–(8)<br>(9)–(9) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male |
| b) | RS-232C connection<br>FX-232CAB-1 | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (2)–(2)<br>(3)–(3)<br>(6)–(6)<br>(8)–(8)<br>(5)–(5)<br>(4)–(4) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female |

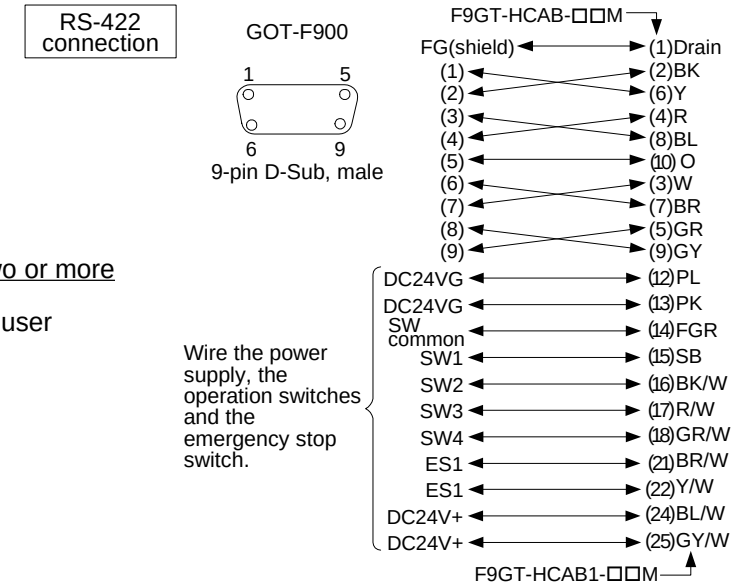
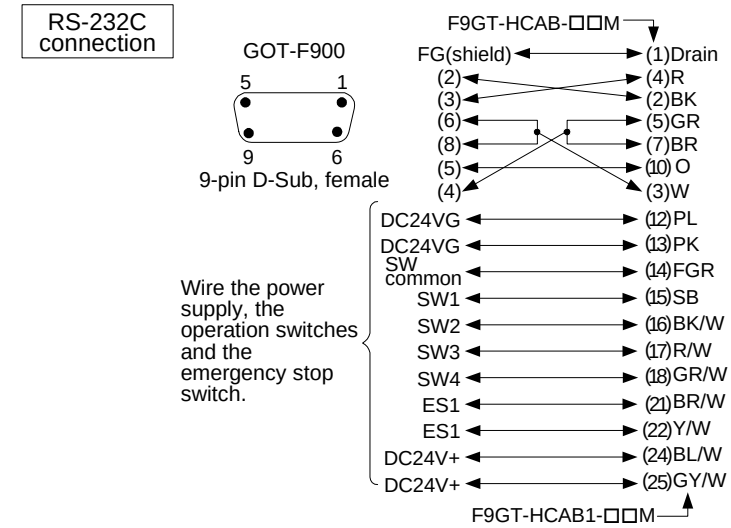
In the case of microcomputer connection

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| c) | RS-422 connection<br>Connection of two or more GOT units<br>Prepared by the user<br>( 1) in the table above is also available .) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(1)<br>(2)–(2)<br>(6)–(6)<br>(7)–(7)<br>(5)–(5) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male |
| d) | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (2)–(2)<br>(3)–(3)<br>(4)–(4)<br>(6)–(6)<br>(7)–(7)<br>(8)–(8)<br>(5)–(5) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female |

### 2) Cable for the GOT and the Handy GOT (in connection of two or more GOT units)

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | Connection of two or more GOT units<br>Prepared by the user | RS-422 connection |  | To cable F9GT-HCAB or F9GT-HCAB1 of F940 Handy GOT |
| b) | | RS-232C connection |  | To cable F9GT-HCAB or F9GT-HCAB1 of F943 Handy GOT |

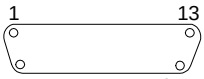
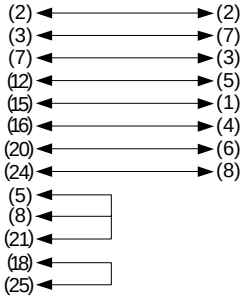
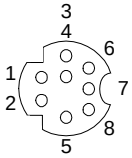
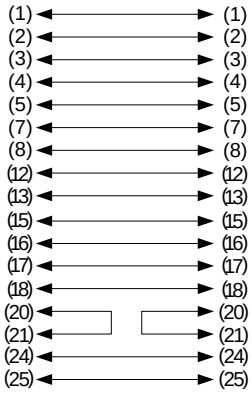
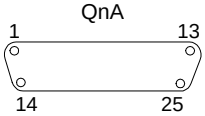
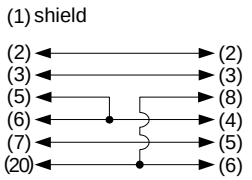
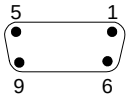
In the case of microcomputer connection

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| c) | RS-422 connection<br><br>Connection of two or more GOT units<br>Prepared by the user<br><br>( a) in the table above is available also.) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male<br><br>Wire the power supply, the operation switches and the emergency stop switch. | F9GT-HCAB-□□M<br>FG(Class D grounding)<br>(1) Drain wire<br>(2) BK<br>(6) Y<br>(3) W<br>(7) BR<br>(10) O<br>DC24VG (12) PL<br>DC24VG (13) PK<br>SW common (14) FGR<br>SW1 (15) SB<br>SW2 (16) BK/W<br>SW3 (17) R/W<br>SW4 (18) GR/W<br>ES1 (21) BR/W<br>ES1 (22) Y/W<br>DC24V+ (24) BL/W<br>DC24V+ (25) GY/W<br>F9GT-HCAB1-□□M | To cable F9GT-HCAB or F9GT-HCAB1 of F940 Handy GOT |
| d) | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female<br><br>Wire the power supply, the operation switches and the emergency stop switch. | F9GT-HCAB-□□M<br>FG(Class D grounding)<br>(1) Drain wire<br>(4) R<br>(2) BK<br>(3) W<br>(5) GR<br>(6) Y<br>(7) BR<br>(10) O<br>DC24VG (12) PL<br>DC24VG (13) PK<br>SW common (14) FGR<br>SW1 (15) SB<br>SW2 (16) BK/W<br>SW3 (17) R/W<br>SW4 (18) GR/W<br>ES1 (21) BR/W<br>ES1 (22) Y/W<br>DC24V+ (24) BL/W<br>DC24V+ (25) GY/W<br>F9GT-HCAB1-□□M | To cable F9GT-HCAB or F9GT-HCAB1 of F943 Handy GOT |

### 3) Cable for the PLC/personal computer and the FX-232AW(C)

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | FX-422CAB0 RS-422 connection | FX-232AW(C)   25-pin D-Sub, male |   | FX0/FX0S/FX1S/FX0N/ FX1N/FX2N/FX2NC   8-pin MINI DIN, male |
| b) | FX-422CAB RS-422 connection | FX-232AW(C) 25-pin D-Sub, male |   | FX/FX1/FX2/FX2C/A/ QnA   25-pin D-Sub, male |
| c) | F2-232CAB-1 RS-232C connection | FX-232AW(C) 25-pin D-Sub, male |   | GOT-F900   9-pin D-Sub, female |

## 7.8 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of two or more GOT units.

### 1) GOT-F900

| Classification | Contents of trouble | Check points and countermeasures |
|---|---|---|
| GOT-F900 | "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | Nothing is displayed on the screen of some GOT units.<br><br>• Causes<br>Communication is disabled because the power of the connected equipment is turned off.<br><br>• Countermeasures<br>Turn on the power. |
| | | Some of the connected GOT units do not display.<br><br>• Causes<br>The power has been turned on before or at the same instant as connected equipment was turned on.<br><br>• Countermeasures<br>Turn on the connected equipment first.<br>Set the opening screen display period longer. |
| | | The first GOT unit (closest from connected equipment) displays an user screen, but the second and later (further) GOT units do not.<br><br>• Causes<br>The second and later GOT units has not been ready to communicate before display of the opening screen of the first GOT finished.<br>The power of the second and later GOT is turned off.<br><br>• Countermeasures<br>Set the opening screen display period longer.<br>Turn on the second and later GOT. |
| GT Designer DU/WIN | When the screen data is transferred by the screen creation software, "No response from terminal", etc. is displayed. | The RS-232C port of the GOT-F900 is allocated to another connected equipment (bar code reader or printer).<br><br>• Causes<br>1)"RS-232C" is specified for PLC connection.<br>2)The bar code reader is set valid.<br>3)The printer is set valid.<br>Confirm the settings above in the screen creation software.<br><br>• Countermeasures<br>Select by hand the data transfer mode in the GOT-F900.<br>Start up the system screen, display the "SELECT MODE" screen, select "OTHER MODE" - "DATA TRANSFER" on the menu, then transfer the screen data. |
| GOT-F900 | When the screen data is transferred by the screen creation software, the "DATA TRANSFER" screen does not appear in the GOT-F900. | |

# MEMO

# 8. Connection of MELSEC-F FX Series PLC

This chapter explains connection of the GOT-F900 Series display unit to the FX Series PLC.

**Connection Procedure**

This section introduces the procedure to connect the GOT-F900 to the FX Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 8.1 |
| System Configuration | You can select the configuration between the GOT and the FX Series PLC and proper cables. | 8.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| FXCPU Selection in Direct Connection | When FXCPU connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the FX Series PLC. | – |
| Cautions on Use of MELSEC-F FX Series | You can learn the restrictions in connecting the GOT to the FX Series PLC. | 8.3 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 8.4 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for FX Series PLC/GOT connection. | 8.5 |
| Troubleshooting | Description of errors and how to fix them | 8.6 |

## 8.1 System Condition

When connecting the FX Series PLC, check the COM port designation, the OS version of the GOT-F900, and the applicable version of the screen creation software.

Compatibility when connecting FX Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | ✓ | – | ✓ | – | 1.00 | SW5-26C | 2.70 |
| F930GOT | ✓ | ✓ | ✓ | ✓ | 1.00 | SW1-H | 2.20 |
| F930GOT-K | ✓ | ✓ | ✓ | ✓ | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | ✓ | 1.00 | SW1-A | 2.00 |
| F940WGOT | ✓ | ✓ | ✓ | ✓ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | – *1 | 1.00 | SW1-D | 2.10 |
| F943 Handy GOT | – | ✓ | ✓ | – *1 | 1.00 | SW1-D | 2.10 |

- "RS-232C" in the "COM port" column may not be available in some FX Series PLC. Refer to section 3.1.
- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

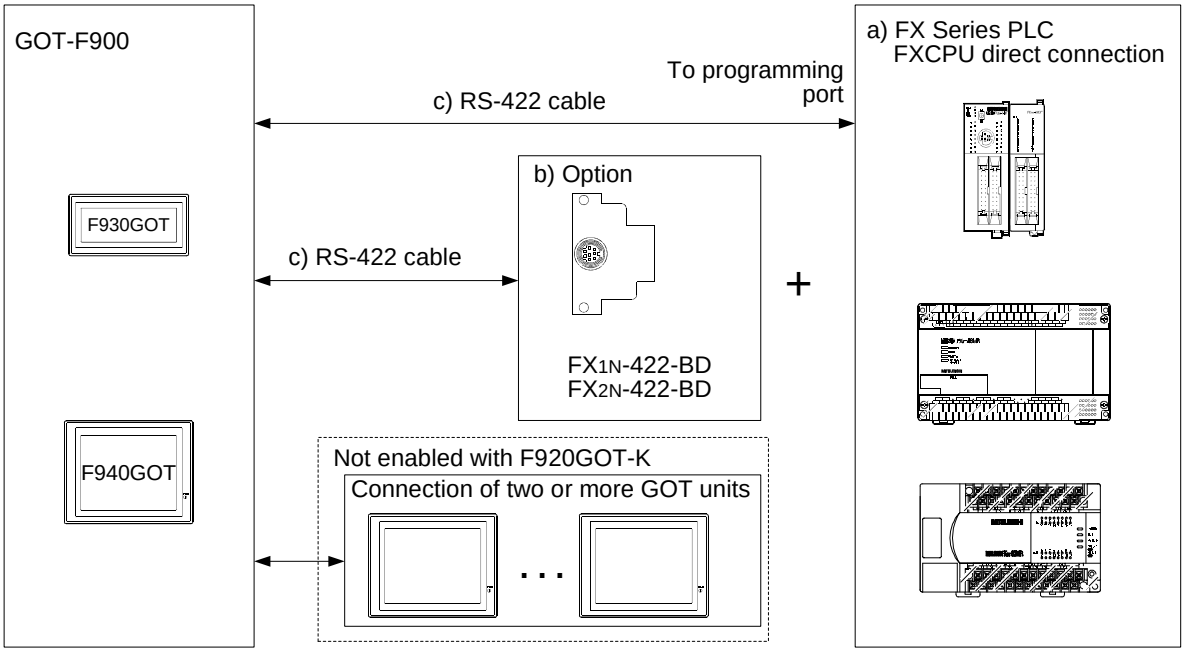
## 8.2 System Configuration

The FX Series PLC can be directly connected to the GOT via RS-422 or RS-232C.
This section explains the cables and options required in such a system.

### 8.2.1 Configuration for CPU Direct Connection (RS-422)

Connect the GOT-F900 to the programming port of the FX Series PLC.
Program transfer and monitoring are available in the GOT-F900 Series using the built-in two-port interface function through connection of a personal computer to the RS-232C port.
(In the Handy GOT, the rear cover would have to be open.)

**1) F920GOT-K/F930GOT/F930GOT-K/F940GOT/F940WGOT**

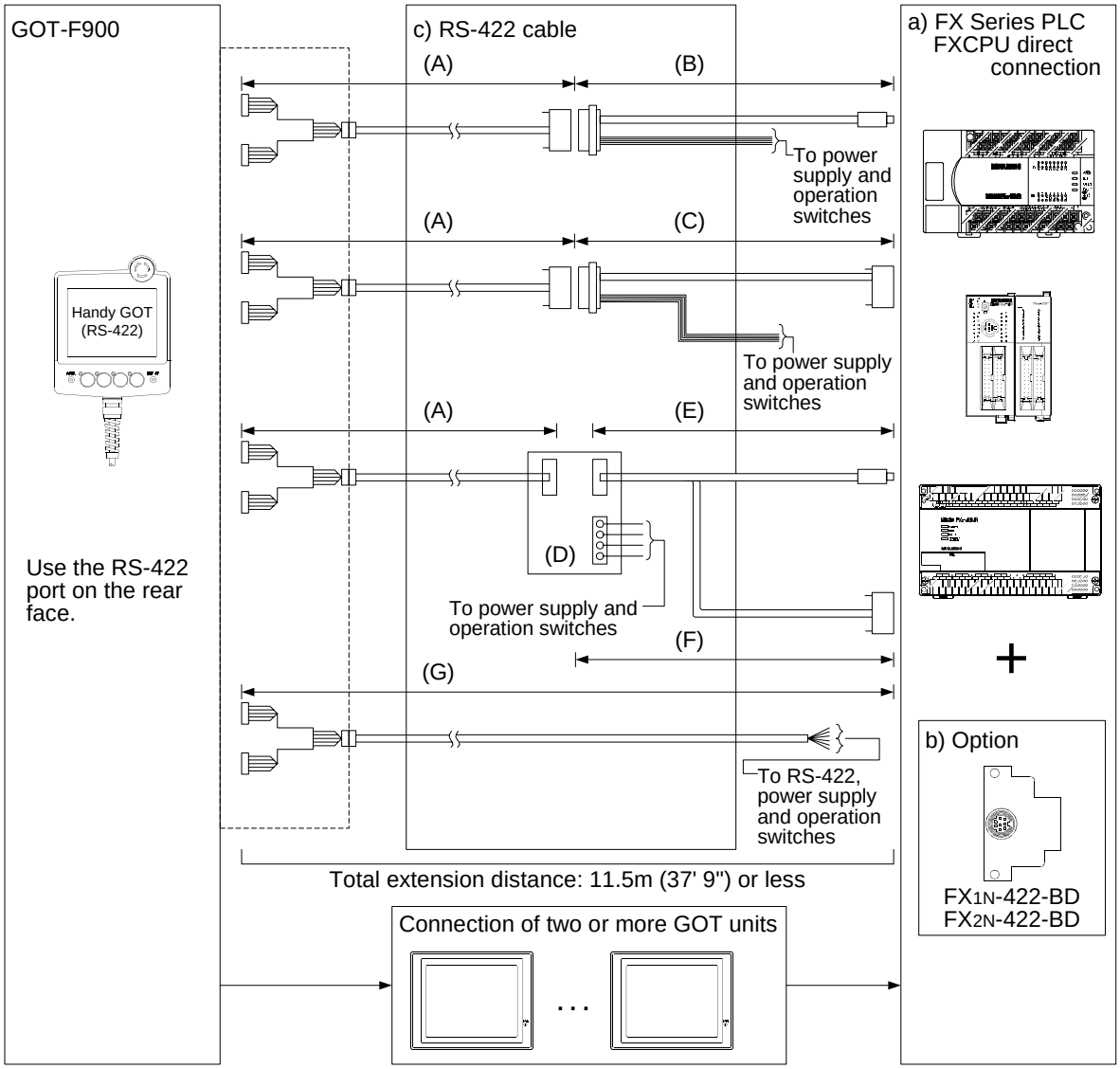



| a) FX Series PLC | | b) Option | c) RS-422 cable |
|---|---|---|---|
| FX0/FX0S/FX0N | FXCPU direct connection (8-pin MINI DIN) | – | FX-50DU-CAB0<br>FX-50DU-CAB0/EN<br>FX-50DU-CAB0-□□M<br>FX-50DU-CAB0L |
| FX1S/FX1N | FXCPU direct connection (8-pin MINI DIN) | – | |
| | | FX1N-422-BD | |
| FX2N | FXCPU direct connection (8-pin MINI DIN) | – | |
| | | FX2N-422-BD | |
| FX2NC | FXCPU direct connection (8-pin MINI DIN) | – | |
| FX/FX1/FX2/FX2C | FXCPU direct connection (25-pin D-Sub) | – | FX-40DU-CAB<br>FX-40DU-CAB-□□M<br>FX-50DU-CABL |

- Only one of the cables listed in column c) is required for connection.
- The L type cable, FX-50DU-CAB0L or FX-50DU-CABL (cable with a right angle connector), cannot be used for F930GOT or F930GOT-K.
- Note the following distinctions when using the F920GOT-K:
  - Only the FX-50DU-CAB0 and FX-50DU-CAB0-1M are applicable.
  - The c) RS-422 cable (3m (9' 10") or shorter) to connect to the FX/FX1/FX2/FX2C Series PLC needs to be prepared by the user.

Before attempting to connect the GOT units per b) Option above, "8.3 Cautions on Use of MELSEC-F FX Series" should be read and understood.

### 2) F940 Handy GOT (RS-422)




| a) FX Series PLC | | b) Option | c) RS-422 cable |
|---|---|---|---|
| FX0/FX0S/FX0 | FXCPU direct connection (8-pin MINI DIN) | – | (A)F9GT-HCAB-□□M |
| FX1S/FX1N | FXCPU direct connection (8-pin MINI DIN) | – | (B)F9GT-HCAB2-150 |
| | | FX1N-422-BD | (C)F9GT-HCAB3-150 |
| FX2N | FXCPU direct connection (8-pin MINI DIN) | – | (D)F9GT-HCNB |
| | | FX2N-422-BD | (E)FX-50DU-CAB0 or FX-50DU-CAB0-1M |
| FX2NC | FXCPU direct connection (8-pin MINI DIN) | – | (G)F9GT-HCAB1-□□M |
| FX/FX1/FX2/FX2C | FXCPU direct connection (25-pin D-Sub) | – | (A)F9GT-HCAB-□□M<br>(F)FX-40DU-CAB<br>(G)F9GT-HCAB1-□□M |

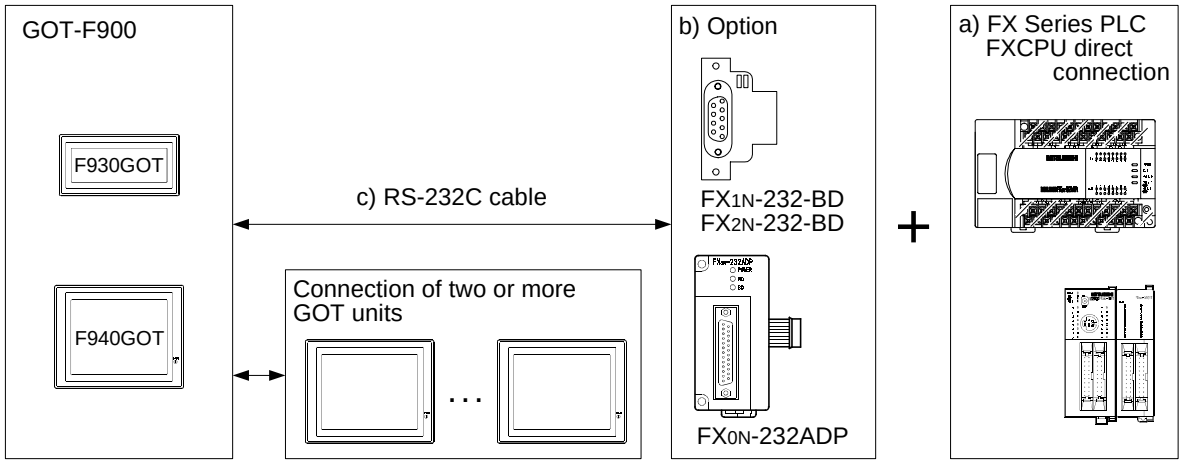
- Make sure that the total cable extension distance "(A) + (B)", (A) + (C)" or (G) is 11.5m (37' 9") or less.

Before attempting to connect the GOT units per b) Option above, "8.3 Cautions on Use of MELSEC-F FX Series" should be read and understood.

### 8.2.2 Configuration for CPU Direct Connection (RS-232C)

By attaching an option for RS-232C communication to the FX Series PLC (FX1S/FX1N/FX2N/FX1NC/FX2NC only), the GOT-F900 can be connected via RS-232C.
Because the programming port of the FX Series PLC is not occupied by the GOT-F900, a personal computer or dedicated machine (such as the A6GPP and the A7PHP) can be connected for monitoring and transfer of sequence programs or another GOT-F900 unit can be connected.

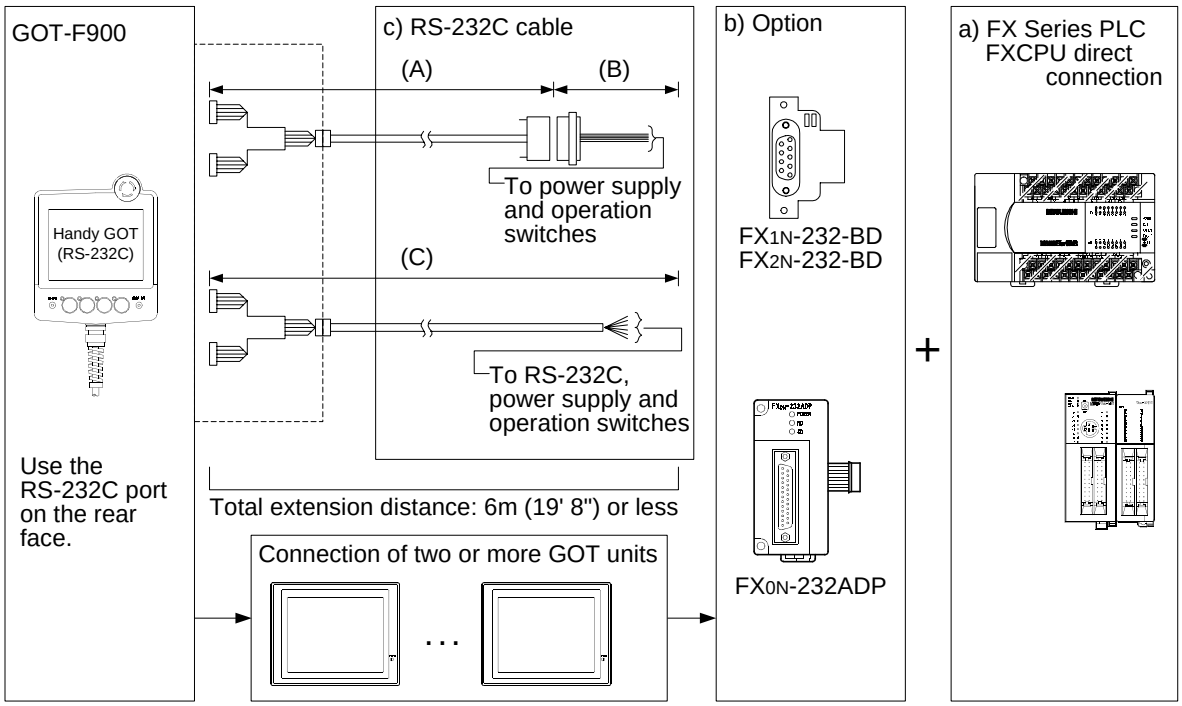
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) FX Series PLC | | b) Option | c) RS-232C cable |
|---|---|---|---|
| FX1S/FX1N | FXCPU direct connection (9-pin D-Sub) | FX1N-232-BD | FX-232CAB-1 |
| | FXCPU direct connection (25-pin D-Sub) | FX1N-CNV-BD + FX0N-232ADP | F2-232CAB-1 |
| FX2N | FXCPU direct connection (9-pin D-Sub) | FX2N-232-BD | FX-232CAB-1 |
| | FXCPU direct connection (25-pin D-Sub) | FX2N-CNV-BD + FX0N-232ADP | F2-232CAB-1 |
| FX2NC | FXCPU direct connection (25-pin D-Sub) | FX0N-232ADP | F2-232CAB-1 |

Before attempting to connect the GOT units per b) Option above, "8.3 Cautions on Use of MELSEC-F FX Series" should be read and understood.

### 2) F943 Handy GOT




| a) FX Series PLC | | b) Option | c) RS-232C cable |
|---|---|---|---|
| FX1S/FX1N | FXCPU direct connection (9-pin D-Sub) | FX1N-232-BD | (A)F9GT-HCAB-□□M |
| | FXCPU direct connection (25-pin D-Sub) | FX1N-CNV-BD + FX0N-232ADP | (B)Prepared by the user |
| FX2N | FXCPU direct connection (9-pin D-Sub) | FX2N-232-BD | (C)F9GT-HCAB1-3M |
| | FXCPU direct connection (25-pin D-Sub) | FX2N-CNV-BD + FX0N-232ADP | |
| FX2NC | FXCPU direct connection (25-pin D-Sub) | FX0N-232ADP | |

- In the (C)F9GT-HCAB1-3M shown in the column "c) RS-232C cable", the end on the PLC side is loose wires.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6 m or less.

Before attempting to connect the GOT units per b) Option above, "8.3 Cautions on Use of MELSEC-F FX Series" should be read and understood.

## 8.3 Cautions on Use of MELSEC-F FX Series

When using the GOT-F900 connected to the FX Series PLC, observe the following cautions on use.

### 8.3.1 Device specification

The device range specifications vary depending on the model of the FXCPU.
Input relays (X) X000 to X377 can be read only.
It is not allowed to specify a bit device as a word device or specify a word device as a bit device.
For the details, refer to section 3.3.

### 8.3.2 Devices which can be monitored

Specify the device No. of input relays (X) and output relays (Y) in octal (1, 2, 3 ... 7, 10, 11 ... 17, 20).
Specify the device No. of other devices in decimal.
Only devices described in "3.3 Device Names Which can be Monitored" can be specified.

### 8.3.3 When GOT-F900 is connected to optional port

By connecting the appropriate module to the FX Series PLC (see table below), the GOT-F900 can be connected to the optional port.
In this case, set the GOT-F900 to CPU direct connection. No setting is required in the FX Series PLC because programming communication is specified at the time of shipment from the factory.

| FX Series PLC | | FX1S | FX0N | FX1N | FX2N | FX2NC |
|---|---|---|---|---|---|---|
| Option | FX0N-232ADP | ✓ | – | ✓ | ✓ | ✓ |
| | FX0N-485ADP | – | – | – | – | – |
| | FX1N-232-BD | ✓ | – | ✓ | – | – |
| | FX1N-422-BD | ✓ | – | ✓ | – | – |
| | FX1N-485ADP | – | – | – | – | – |
| | FX2N-232-BD | – | – | – | ✓ | – |
| | FX2N-422-BD | – | – | – | ✓ | – |
| | FX2N-485ADP | – | – | – | – | – |

These optional ports enable communication using either communication protocol, no protocol communication, computer link, easy PLC link, parallel link and programming.
For connecting the GOT-F900, the programming communication mode should be selected (which is set at the time of shipment from the factory). If any other protocol or an improper protocol has been set, release the setting (by a sequence program or the software) while referring to the procedure below.

**1) To set by a sequence program**

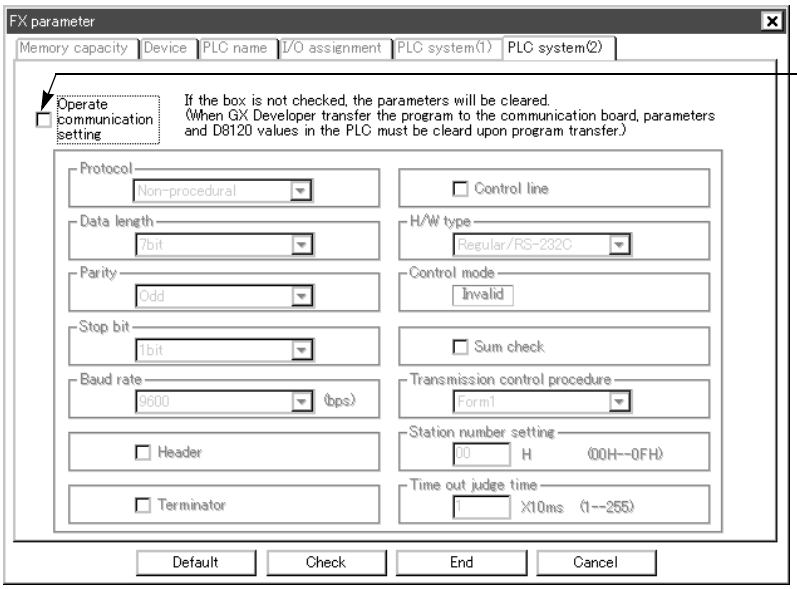
- Delete the no protocol communication (RS instruction).
- Delete programs set by computer link, easy PLC link and parallel link.
- Delete the setting of communication parameters (D8120). (If the parameters are set using the software for sequence program, refer to the description on the setting by the software also.)

**For the details on the program settings, refer to the "FX COMMUNICATION (RS-232C/RS-422) USER'S MANUAL".**

**2) To set by GX Developer (GPP/W)**

Open GX Developer.

- Read the sequence program to a personal computer.
- From the project data list tree, select "Parameter"-"PLC Parameter".
  If the tree is not displayed, check "Project data list" in "View".
- When the "FX parameter" dialog box appears, click the "PLC system (2)" tab.




Click here to delete the check mark.

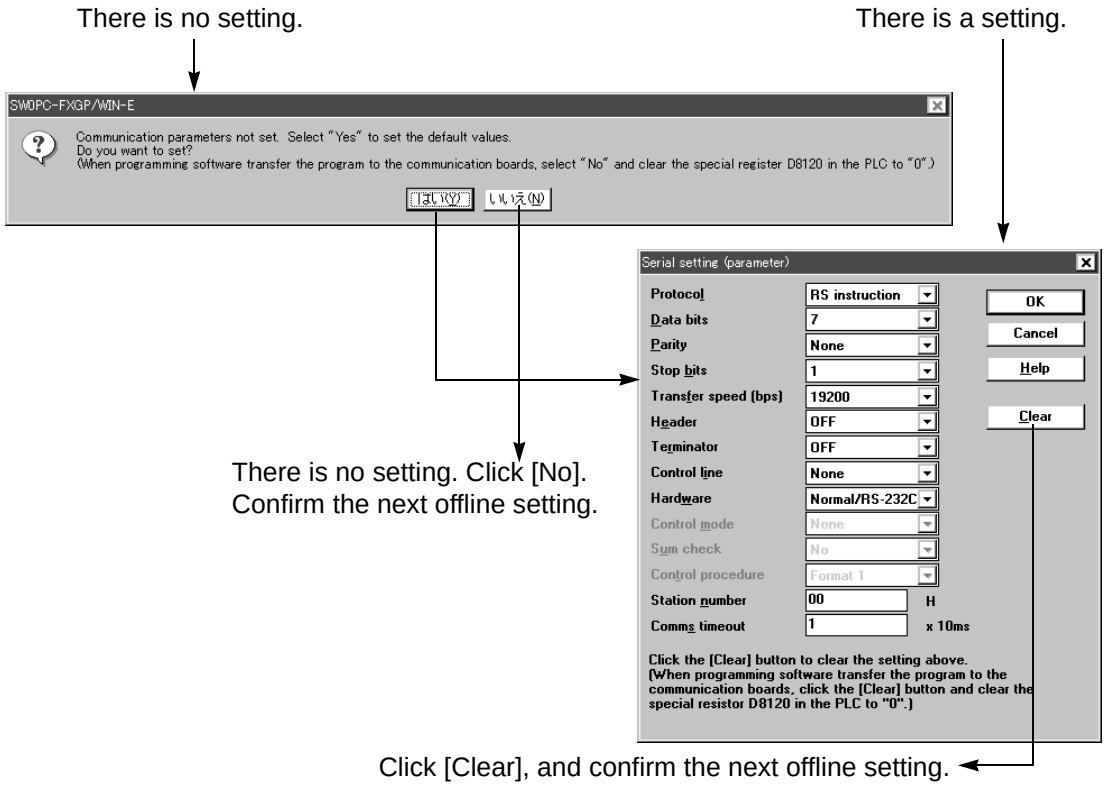
- After changing the setting, transfer the program and turn off the PLC power.
  The parameters are written into the special data register when the PLC is turned on.

### 3) To set by the software FX/WIN

Open FX/WIN. (The setting menu may not be provided in some versions.)
The setting can be executed in the offline mode (by setting parameters) and the online mode (direct writing to D8120 of the FX Series PLC) as shown below. Confirm the setting in each mode.

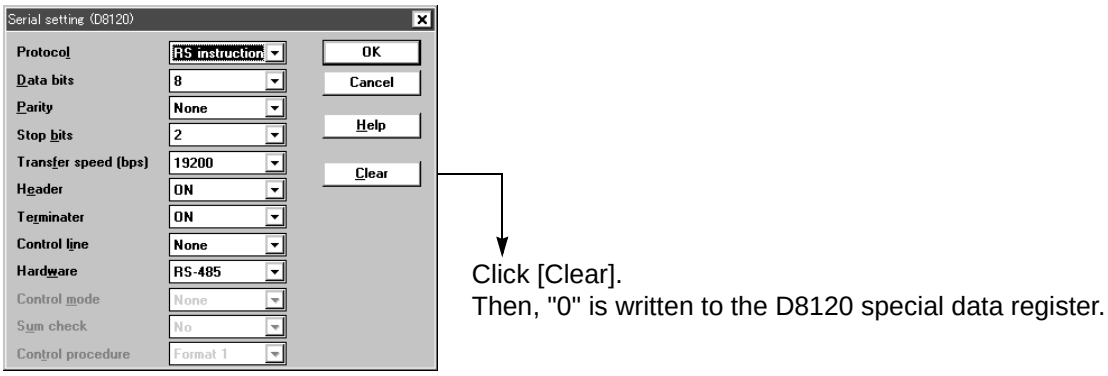
#### 1. Offline (setting by parameters)

- Read the sequence program to the personal computer.
- On the menu, select "Option"-"Serial setting (parameter)".
- Check the display on the dialog box to confirm whether or not there is a setting.
  If the confirmation dialog box shown on the left is displayed, there is no setting.
  If the setting screen shown on the right is displayed, click [Clear] to cancel the current data.




#### 2. Online (direct writing to D8120 of the FX Series PLC)

- On the menu, select "PLC"-"Serial setting (D8120)".
- The setting dialog box is displayed.




- After changing the setting, transfer the program and turn off the PLC power.
  The parameters are written into the special data register when the PLC is turned on.

### 8.3.4 Restrictions in connecting two or more F920GOT-K units to FX Series PLC

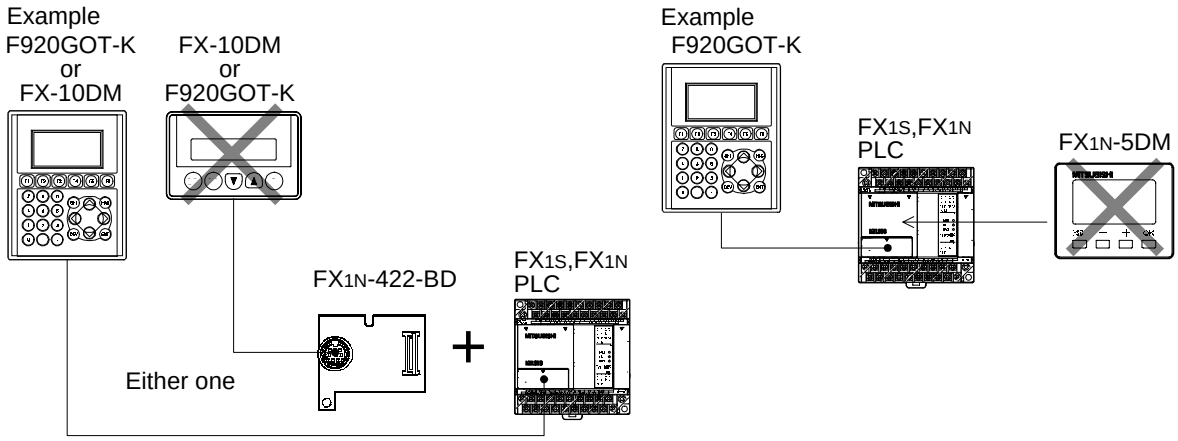
This section explains the restrictions in connecting two or more F920GOT-K units to the programming port on the optional RS-422 expansion board (FX□N-422-BD).

The RS-422 expansion board cannot be used in the following combinations:

- FX1S, FX1N + FX1N-5DM + FX1N-422-BD + F920GOT-K
- FX1S, FX1N + F920GOT-K(or FX-10DM) + FX1N-422-BD + F920GOT-K(or FX-10DM)
- FX2N + Special function block + F920GOT-K(or FX-10DM) + FX2N-422-BD + F920GOT-K(or FX-10DM)

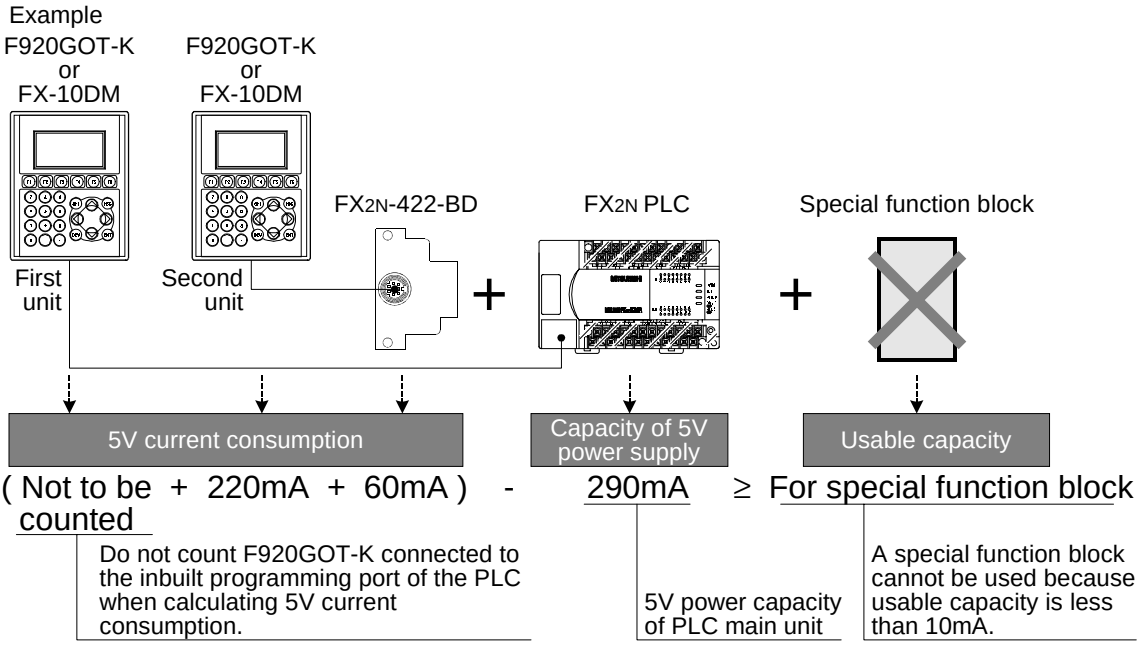
**When connecting to FX1S/FX1N PLC**

- One F920GOT-K can be connected to one PLC.
- The display module (FX1N-5DM or FX-10DM) cannot be used concurrently.




**When connecting to FX2N PLC**

- Up to two units can be connected using the FX2N-422-BD.
  Note, however, that the units are to be connected on the condition shown below (No special function block can be used).



## 8.4 Setting of Connected Equipment for GOT

The FX Series PLC connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

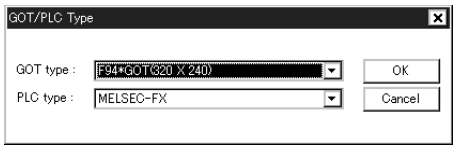
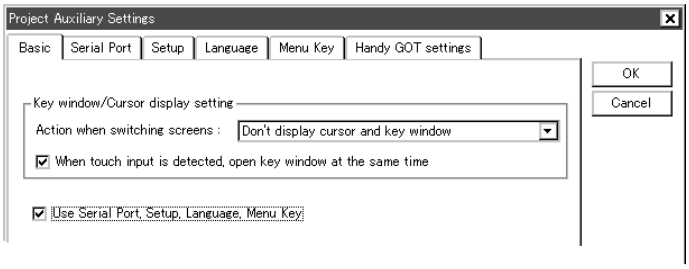
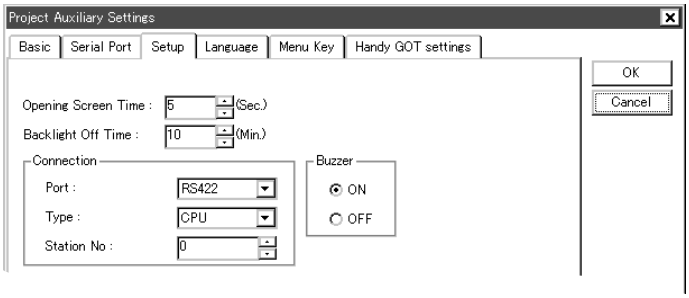
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:FX SERIES<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: FX SERIES<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

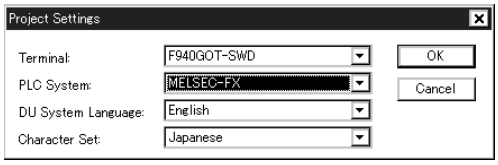
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

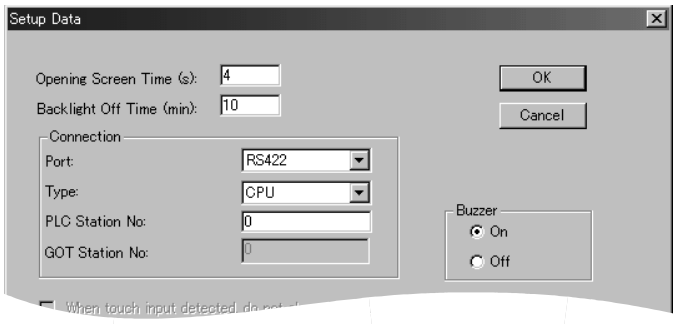
### 2) GT Designer

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) Open GT Designer.<br><br>b) Click the [New] button.<br>  <br><br>c) Set the following.<br>GOT type: F940WGOT (480 × 234)<br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>F920GOT (128 × 64)<br>PLC type:MELSEC-FX<br><br>Selection of "GOT type"<br><br>**GOT type** / **Model name**<br>F940WGOT(480×234)<WIDE> / F940WGOT<br>F94*GOT(320×240) / F940GOT, Handy GOT<br>F93*GOT(240×80) / F930GOT-K, F930GOT<br>F920GOT(128×64) / F920GOT-K<br><br>d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900. This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br>  <br><br>Click the "Setup" tab.<br>  <br><br>Click [OK].<br><br>In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page. | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears. |

| Operation | | Display (screen name) |
|---|---|---|
| | e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 00<br>GOT Station No. (–) : – | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br><br><br>The "GOT/PLC Type" dialog box appears. |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br>b) On the menu, select "File"-"New".<br> 

<br>c) Set the following.<br>Terminal: F940WGOT-TWD (V) (H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>F920GOT-BBD5-K<br>PLC System: MELSEC-FX<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT (blue)</td></tr>
<tr><td>F920GOT-BBD5-K</td><td>F920GOT-K (blue)</td></tr>
</table>
d) Set CPU direct (RS-422/RS-232C) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

<br>e) Set the following.<br>Port: RS-422<br>RS-232C<br>Type: CPU<br>DST Station No. (Station No.): 00<br>GOT Station No. (–) : –</td><td>The "Project settings" dialog box appears.<br><br>The "PLC" selection item display varies depending on the software version. In version 2.4 or later, "MELSEC-FX" is displayed instead of "FX".<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For setting of RS-232C/RS-422 of the FX Series, refer to e) in [Creation] above.</td><td>The "Open" dialog box appears.<br><br>The "Project settings" dialog box appears.</td></tr>
</table>

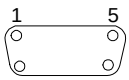
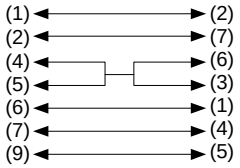
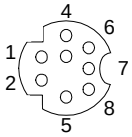
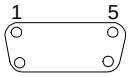
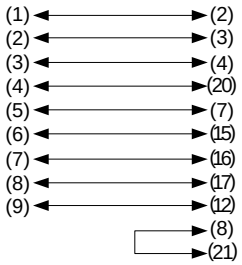
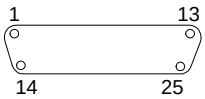
## 8.5 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the FX Series PLC.

**1) Cable for the GOT and the FX Series PLC**

F920GOT-K

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>FXCPU direct connection<br>FX-50DU-CAB0<br>FX-50DU-CAB0-1M | GOT-F900<br>  <br><br>9-pin D-Sub, male |  <br> | $FX_0$/$FX_{0S}$/$FX_{1S}$/<br>$FX_{0N}$/$FX_{1N}$/$FX_{2N}$/<br>$FX_{2NC}$<br>  <br><br>8-pin MINI DIN, male |
| b) | RS-422 connection<br>FXCPU direct connection<br><br>Prepared by the user<br>(Cable length 3m(9'10") or less)<br><br>Resistance per wire: 0.67 Ω or less<br>(Approximately AWG 28 or thicker) | GOT-F900<br>  <br><br>9-pin D-Sub, male |  <br> | FX,$FX_1$,$FX_2$,$FX_{2C}$<br>  <br><br>25-pin D-Sub, male |

The cable length must be 3m (9'10") or less when used for the F920GOT-K.

F930GOT/F930GOT-K/F940GOT/F940WGOT

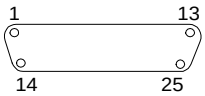
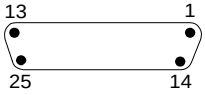
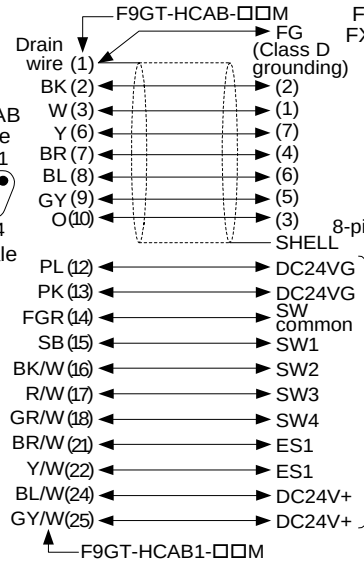
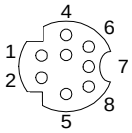
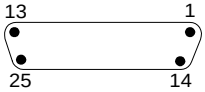
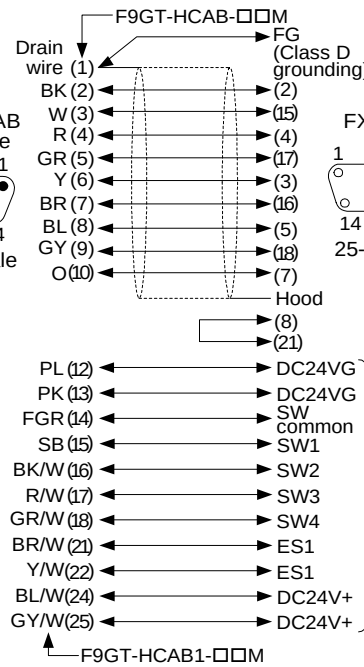
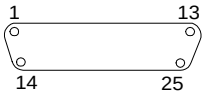
: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | FXCPU direct connection<br>FX-50DU-CAB0<br>FX-50DU-CAB0/EN<br>FX-50DU-CAB0-1M<br>FX-50DU-CAB0-10M<br>FX-50DU-CAB0-20M<br>FX-50DU-CAB0-30M<br>FX-50DU-CAB0L | RS-422 connection | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(7)<br>(4)–(6)<br>(5)–(3)<br>(6)–(1)<br>(7)–(4)<br>(9)–(5) | FX0/FX0S/FX1S/FX0N/FX1N/FX2N/FX2NC<br>3 4 6 1 7 2 8 5<br>8-pin MINI DIN, male |
| b) | FXCPU direct connection<br>FX-40DU-CAB<br>FX-40DU-CAB-10M<br>FX-40DU-CAB-20M<br>FX-40DU-CAB-30M<br>FX-50DU-CABL | RS-422 connection | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(3)<br>(3)–(4)<br>(4)–(5)<br>(5)–(7)<br>(6)–(15)<br>(7)–(16)<br>(8)–(17)<br>(9)–(18)<br>(8)–(21) | FX,FX1,FX2,FX2C<br>1 13<br>14 25<br>25-pin D-Sub, male |
| c) | FXCPU direct connection<br>F2-232CAB-1 | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | Shield (1)<br>(2)–(2)<br>(3)–(3)<br>(8)–(5)<br>(4)–(6)<br>(5)–(7)<br>(6)–(20) | FX0N-232ADP<br>1 13<br>14 25<br>25-pin D-Sub, male |
| d) | FXCPU direct connection<br>FX-232CAB-1 | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (2)–(2)<br>(3)–(3)<br>(6)–(6)<br>(8)–(8)<br>(5)–(5)<br>(4)–(4) | FX1N-232-BD<br>FX2N-232-BD<br>5 1<br>9 6<br>9-pin D-Sub, female |

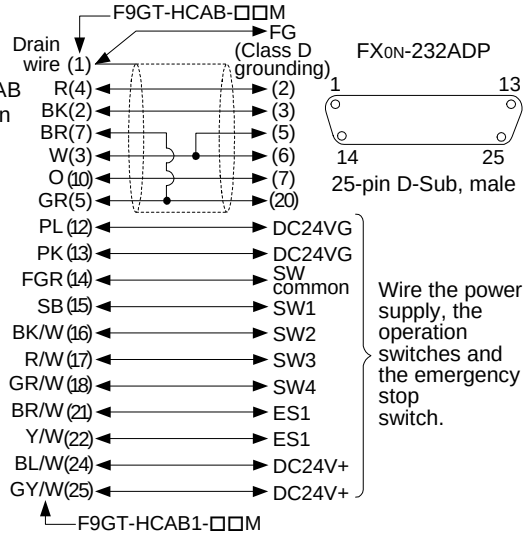
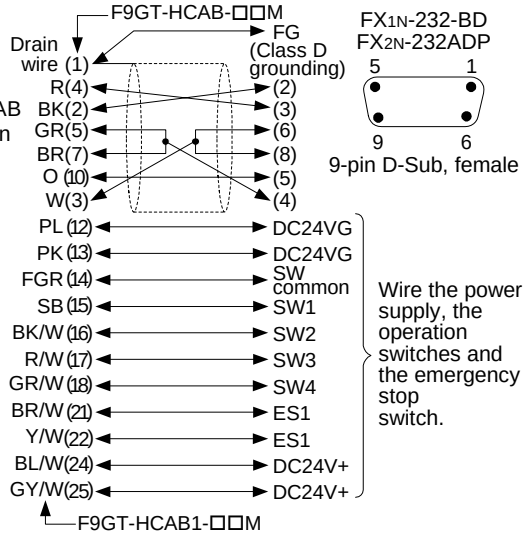
**2) Cable for the Handy GOT and the FX Series PLC**

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB2-150 or F9GT-HCAB3-150<br>  <br><br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | F9GT-HCAB2-150<br>RS-422 connection<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | To cable F9GT-HCAB on Handy GOT side<br>  <br><br>25-pin D-Sub, female |  <br> | FX0/FX0S/FX1S/<br>FX0N/FX1N/FX2N/<br>FX2NC<br>  <br><br>8-pin MINI DIN, male |
| d) | F9GT-HCAB3-150<br>RS-422 connection<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | To cable F9GT-HCAB on Handy GOT side<br>  <br><br>25-pin D-Sub, female |  <br> | FX,FX1/FX2/FX2C<br>  <br><br>25-pin D-Sub, male |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | FX0N-232ADP<br>1 13<br>14 25<br>25-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| f) | Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | FX1N-232-BD<br>FX2N-232ADP<br>5 1<br>9 6<br>9-pin D-Sub, female<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 8.6 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FX Series PLC.
The slightly different messages may be displayed on the F920GOT-K.

**1) GOT-F900**

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen by a touch key *1.<br><br>*1 No touch key is available on the F920GOT-K. | The power of the FX Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the FX Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the FX Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the FX Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the FX Series PLC was referenced.<br>(Example: While an FX0S Series PLC is connected, a device exists only in the FX2N Series PLC is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected FX Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | When a PLC is not connected, the GOT defaults to the FX2 mode.<br><br>• Cause<br>Check for the FX2 or FX2N Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the changeover destination screen (excluding the head screen) is beyond the range for the FX2 Series.<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | A device that does not exist in the FX Series PLC was referenced. (Example: While an FX0S Series PLC is connected, a device exits only in the FX2N Series PLC is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected FX Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | | |
| | While the FX Series PLC is not connected, the connection mode for the FX2 Series PLC is selected.<br><br>• Cause<br>Check for the FX2 or FX2N Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the head screen is beyond the range for the FX2 Series.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later | From first product |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | Programs and device set values of the FX Series PLC cannot be changed.<br><br>• Causes<br>The write-protect switch of the memory cassette is set to ON. PLC Password protection is on.<br>• Countermeasures<br>Set the write-protect switch to OFF.<br>Enter the keywords by "SELECT MODE"-"OTHER MODE"-"ENTRY CODE". | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 | – |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | Programs and device set values of the FX Series PLC cannot be changed.<br>• Causes<br>The write-protect switch of the memory cassette is set to ON. PLC Password protection is on.<br>• Countermeasures<br>Set the write-protect switch to OFF.<br>Enter the keywords by "SELECT MODE"-"OTHER MODE"-"ENTRY CODE". | 1.10 or later | 6.10 or later | 4.10 or later | From first product |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | Programs and device set values of the FX Series PLC cannot be changed.<br>• Causes<br>PLC Password protection is on.<br>• Countermeasures<br>Enter the keywords by "SELECT MODE"-"OTHER MODE"-"ENTRY CODE". | From first product | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | An attempt was made to edit the set value of the timer or counter, or the current value of the file registers of the FX Series PLC.<br>• Cause<br>Such changes are disabled while the FX Series PLC equipped with the EEPROM memory cassette is running. (Data saved in the built-in EEPROM can be changed.)<br>Such changes are also disabled when the PLC is equipped with EPROM memory cassette.<br>• Countermeasures<br>Run the FX Series PLC using the built-in memory.<br>Specify the set value of the timer (T) and the counter (C) indirectly through the data register (D). | From first product | From first product | From first product | From first product |

**2) Software**

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Software such as GX Developer and FX/WIN | In the personal computer connected to the GOT-F900, sequence programs cannot be monitored or transferred.<br>Communication with the sequence software is disabled. An error message is displayed. | A PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>For monitoring or transferring sequence programs, set a bar code reader to invalid and a printer to "DON'T USE".<br>If the PLC is connected, select the GOT-F900 equipped with two built-in RS-232C channels. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. |
| Screen creation software | In the personal computer connected to the GOT-F900, screen data cannot be transferred.<br>Communication with the screen creation software is disabled.<br>An error message is displayed. | A PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | A personal computer is connected, and the software for PLC (such as GPP/W and FX/WIN) and the screen creation software are used at the same time.<br><br>• Cause<br>Program transfer or monitoring is executed by the software for PLC.<br>• Countermeasures<br>Terminate program transfer or monitoring by the PLC software. If the error status still continues, shut down the PLC. Otherwise, shut down the personal computer, start it up again, then start up only the screen creation software. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 9. Connection of MELSEC-A Series PLC

This chapter explains connection of the GOT-F900 Series display unit to the CPU unit or the computer link unit of the A Series PLC.
The same procedure is taken when connecting to the CPU of the motion controller (in which CPU direct connection is available).

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the A Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 9.1 |
| System Configuration | You can select the configuration between the GOT and the A Series PLC/ computer link unit as well as proper cables. | 9.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| ACPU Selection in Direct Connection | In the A computer link, the following setting is required.<br>When A connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the A Series PLC. | – |
| Setting in A Computer Link Connection | You can learn the communication specifications and the setting. | 9.3 |
| | Setting of A computer link: The contents of setting of computer link | 9.3.1 |
| | Setting of CD signal control: The setting method in which CD signals are not checked in the sequence program in RS-232C connection | 9.3.2 |
| | Setting examples: Switch setting in each computer link | 9.3.3 |
| Caution on Use of MELSEC-A Series PLC | You can learn the restrictions in connecting the GOT to the A Series PLC. | 9.4 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 9.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for A Series PLC/GOT connection | 9.6 |
| Troubleshooting | Description of errors and how to fix them | 9.7 |

## 9.1 System Condition

When connecting the A Series PLC, check the COM port designation, the OS version of the GOT-F900, and the applicable version of the screen creation software.

Compatibility when connecting A Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | △ | – | ✓ | – | 1.00 | SW5-26C | 2.70 |
| F930GOT | ✓ | ✓ | ✓ | △ | 1.00 | SW1-H | 2.20 |
| F930GOT-K | ✓ | ✓ | ✓ | △ | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | △ | 1.00 | SW1-A | 2.00 |
| F940WGOT | ✓ | ✓ | ✓ | △ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | △*1 | 1.00 | SW1-D | 2.10 |
| F943 Handy GOT | – | ✓ | ✓ | △*1 | 1.00 | SW1-D | 2.10 |

- "△" in the table indicates that only CPU direct connection is available, and computer link connection is not available.
- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

## 9.2 System Configuration

The A Series PLC can be connected to the GOT through a computer link connection (RS-422 or RS-232C) or directly via RS-422. This section explains the cables and options required in such a system.
In CPU direct connection, two or more GOT units can be connected.

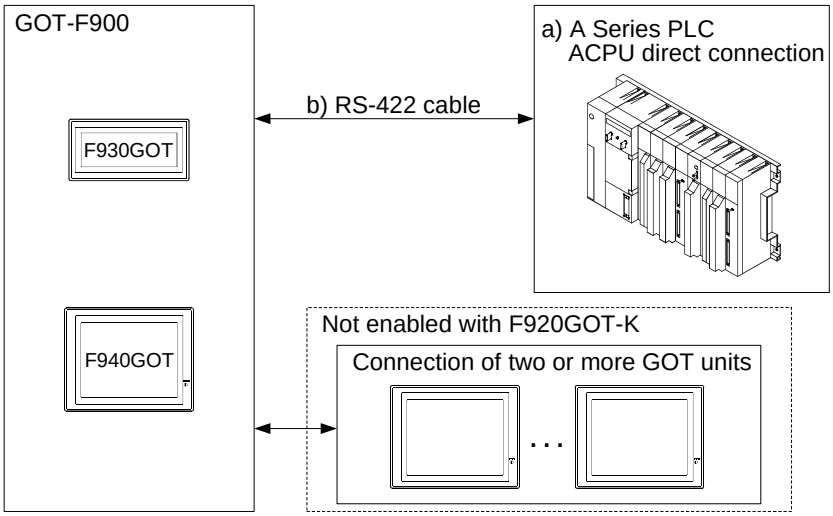
**Applicable model**

| Classification | | Model name | Remarks |
|---|---|---|---|
| ACPU direct connection | CPU | AnN CPU, AnA CPU, AnS CPU, AnSJ CPU, AnSH CPU, A1SJH CPU, A2C CPU, A2CJ CPU, A0J2H CPU, AnU CPU, AnUS CPU, A2USH CPU, A1FX CPU | The connector shape is 25-pin D-Sub. |
| | Motion controller (excluding the F920GOT-K) | A171SCPU-S3 A171SHCPU A172SHCPU A272UHCPU | The connector shape is 25-pin D-Sub. |
| A computer link | Computer link unit (excluding the F920GOT-K) | A1J71UC24 A1SJ71C24-R4 A1SJ71UC24-R4 A1SJ71C24-R2 A1SJ71UC24-R2 A1SCPUC24-R2 AJ71UC24 A2CCPUC24 | The connector shape varies depending on the product. Refer to section 9.3. |

### 9.2.1 Configuration for Direct Connection (RS-422)

Connect the GOT-F900 to the programming port of the A Series PLC.
Program transfer and monitoring are available in the GOT-F900 Series using the built-in two-port interface function through connection of a personal computer to the RS-232C port. (excluding the F920GOT-K)
When using the GX Developer, however, pay attention to the GOT-F900 OS version.

**1) F920GOT-K/F930GOT/F930GOT-K/F940GOT/F940WGOT**




F920GOT-K

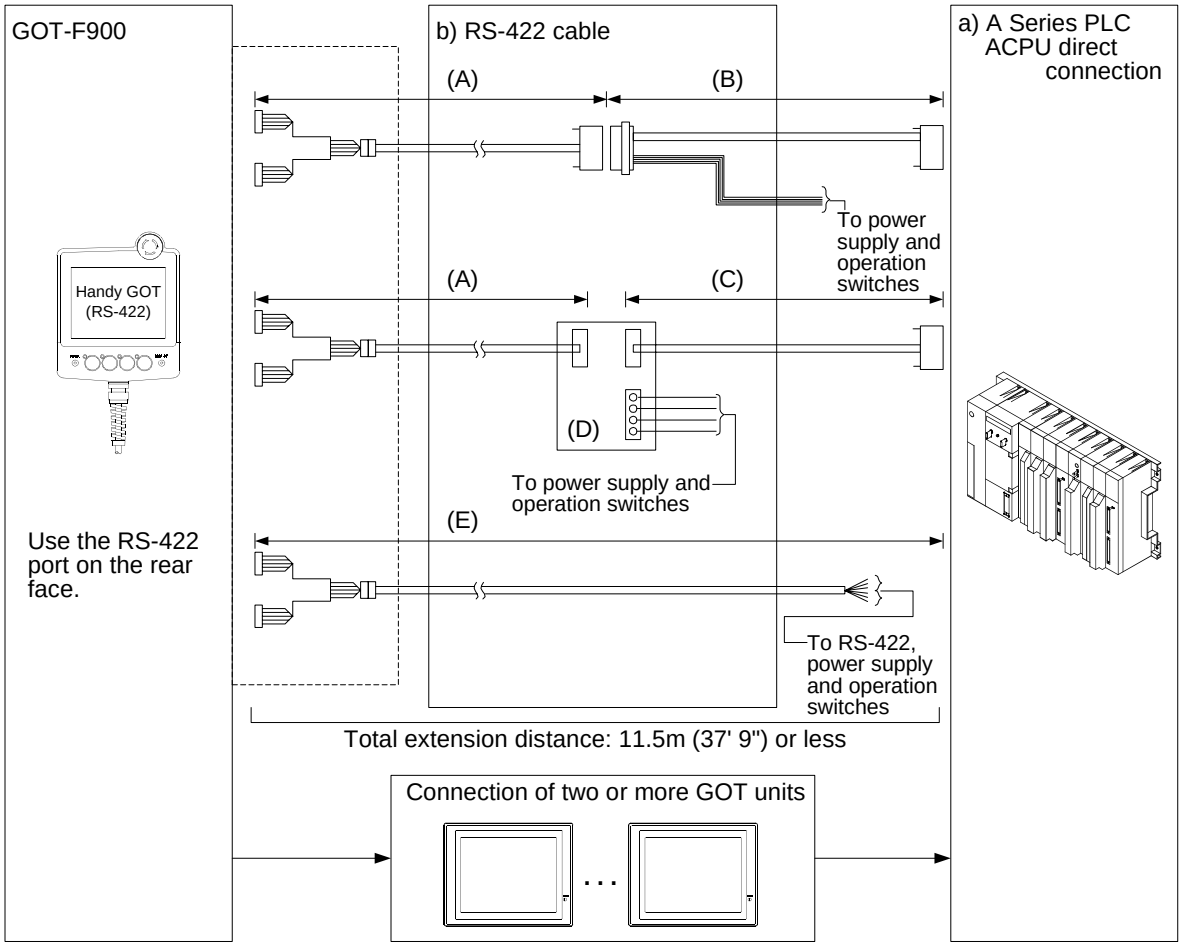
| a) A Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| ACPU direct connection (25-pin D-Sub) | Prepared by the user. | Make sure the total cable extension distance is 3m (9' 10") or less. |

F930GOT/F930GOT-K/F940GOT/F940WGOT

| a) A Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| ACPU direct connection (25-pin D-Sub) | FX-40DU-CAB<br>FX-40DU-CAB-□□M<br>FX-50DU-CABL | "□□" in "FX-40DU-CAB-□□M" indicates the cable length. |

- Only one of the cables listed in column b) is required for connection.
- In the F930GOT and the F930GOT-K, the FX-50DU-CABL right-angle type (L type) cable can not be used.

### 2) F940 Handy GOT



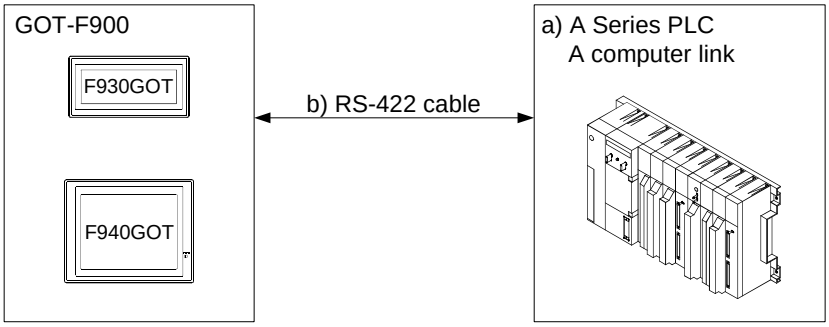

| a) A Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| ACPU direct connection<br>(25-pin D-Sub) | (A) F9GT-HCAB-□□M<br>(B) F9GT-HCAB3-150<br>(C) FX-40DU-CAB<br>(D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | |

- Make sure that the total cable extension distance "(A) + (B)" or (E) is 11.5m (37' 9") or less.

### 9.2.2 Configuration for A Computer Link Connection (RS-422)

The GOT-F900 and the computer link unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of computer link units connected to the A Series PLC can be connected.
Because the programming port of the PLC is not occupied, peripheral programming equipment (dedicated equipment) for PLC can be connected for monitoring and transfer of sequence programs.

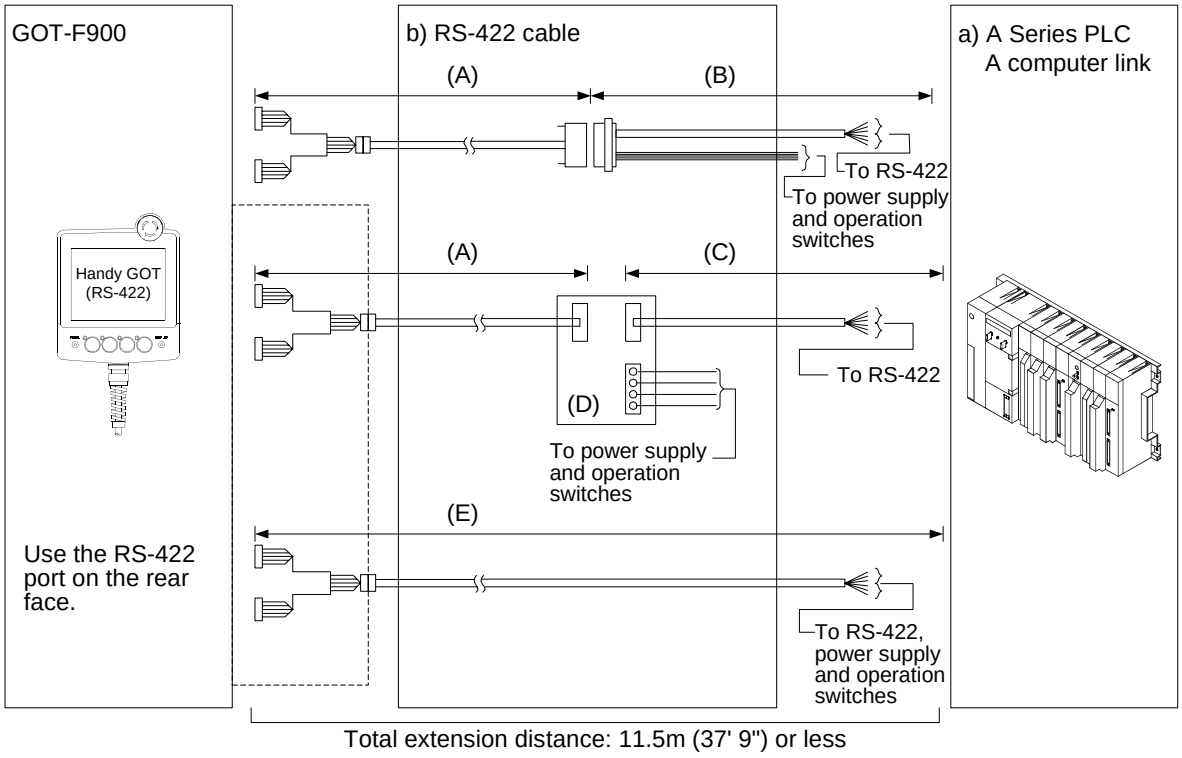
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) A Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| AJ71UC24<br>A1SJ71C24-R4<br>A1SJ71UC24-R4 | Terminal block | Prepared by the user. | Make sure the total cable extension distance is 30m (98' 5") or less. |

- Applicable A Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



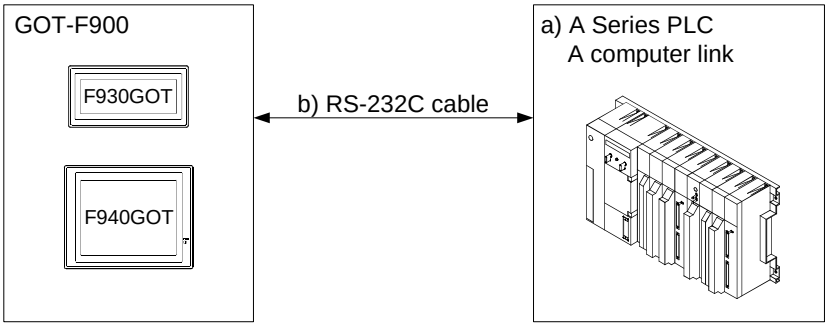

| a) A Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| AJ71UC24<br>A1SJ71C24-R4<br>A1SJ71UC24-R4 | Terminal block | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user.<br>(C) Prepared by the user.<br>(D) F9GT-HCAB<br>(E) F9GT-HCAB1-□□M | Make sure the total cable extension distance is 11.5m (37’ 9”) or less. |

- Applicable A Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.
- Make sure that the total cable extension distance "(A) + (B)" or (E) is 11.5m (37' 9") or less.

### 9.2.3 Configuration for A Computer Link Connection (RS-232C)

The GOT-F900 and the computer link unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of computer link units connected to the A Series PLC can be connected.
Because the programming connector of the PLC is not occupied, peripheral programming equipment (dedicated equipment) for PLC can be connected for monitoring and transfer of sequence programs.

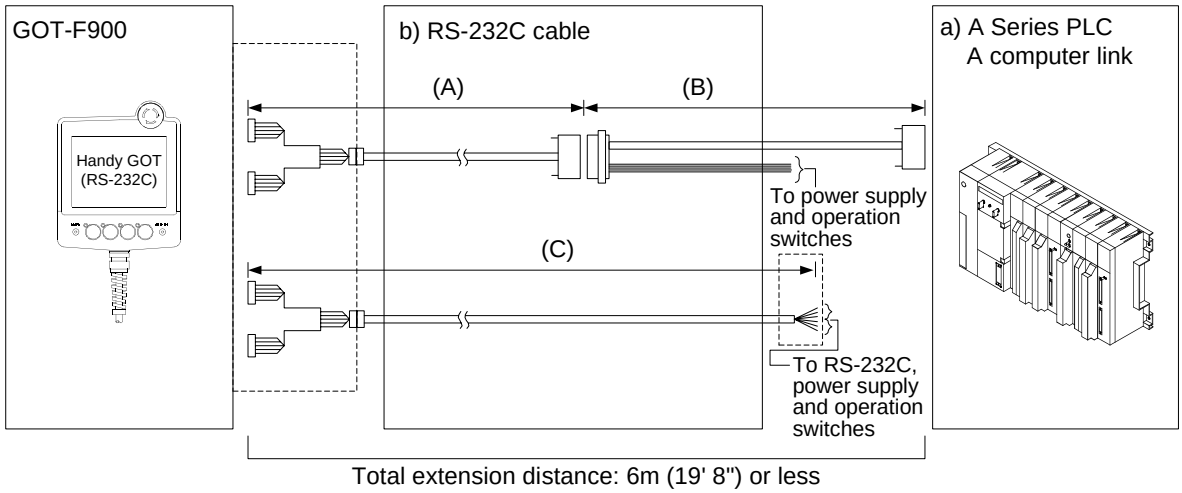
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) A Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| A1SJ71C24-R2<br>A1SJ71UC24-R2<br>A1SCPUC24-R2<br>A2CCPUC24 | 9-pin D-Sub | Prepared by the user. | Make sure the total cable extension distance is 15m (49' 3") or less. |
| AJ71UC24 | 25-pin D-Sub | F2-232CAB-1 | |

- Applicable A Series PLC products in the column a) are computer link units equipped with built-in RS-232C interface.

### 2) F943 Handy GOT




| a) A Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| A1SJ71C24-R2<br>A1SJ71UC24-R2<br>A2CCPUC24<br>A1SCPUC24-R2 | 9-pin D-Sub | (A) F9GT-HCAB-3M<br>(B) Prepared by the user.<br>(C) F9GT-HCAB1-3M | |
| AJ71UC24 | 25-pin D-Sub | | |

- In the (C)F9GT-HCAB1-3M shown in the column "b) RS-232C cable", the end on the PLC side is loose wires.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 9.3 Setting in A Computer Link Connection

In A computer link connection, the switches in the computer link unit (shown in the following page) should be set as described below.

### 9.3.1 Communication Setting Specifications

**1) Setting the mode selector switch**

Set the mode so that the COM port of the computer link unit connected to the GOT-F900 is set to the dedicated protocol format 1.

| COM port | Set value | Remarks |
|---|---|---|
| RS-422 | 5 | RS-422: Format 1<br>RS-232C: No protocol |
| RS-232C | 1 | RS-422: No protocol<br>RS-232C: Format 1 |

**2) Setting the transmission specifications setting switches**

Set the transmission specifications setting switches of the computer link unit to realize the transmission specifications shown in the table below.

| Item | | Set value | Remarks |
|---|---|---|---|
| Transmission speed | | 19,200 bps | |
| Data format | Data bit | 7 bits | |
| | Parity bit | Provided (even) | |
| | Stop bit | 1 bit | |
| | Sum check | Provided | |
| Write in RUN mode | | Possible | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

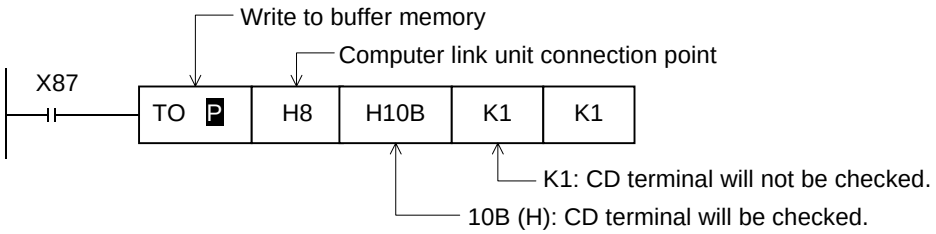
**3) Setting the station number setting switches**

Match the switches to the value set in the GOT-F900 (0 to 15).
(In some computer link units, the switches should be set in the range from 0H to FH.)

### 9.3.2 Setting of CD Signal Control (only in RS-232C connection)

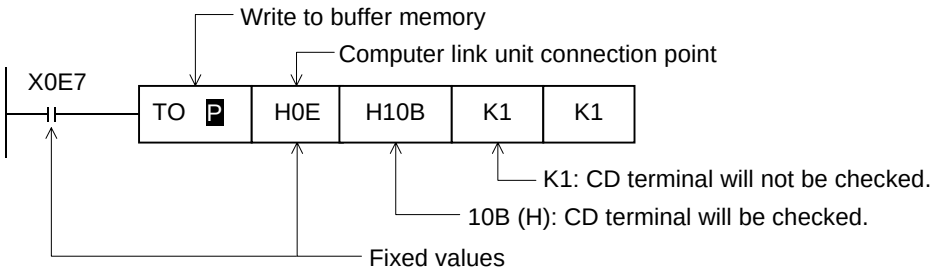
When the GOT-F900 and the computer link unit are connected via RS-232C, set the buffer memory in the computer link unit using the sequence program so that CD signals are not checked.
Refer to the program example below in which the I/O signals of the computer link unit are 80 to 9F (H).
Examples of the CPU units equipped with built-in computer link are explained below also.

**In the case of A computer link**

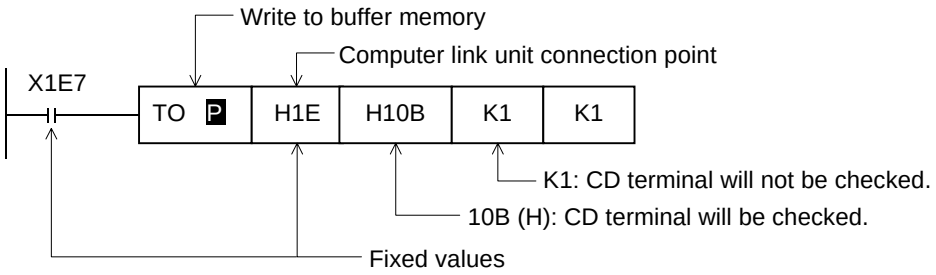



**In the case of CPU equipped with built-in computer link**

- A1SCPUC24-R2



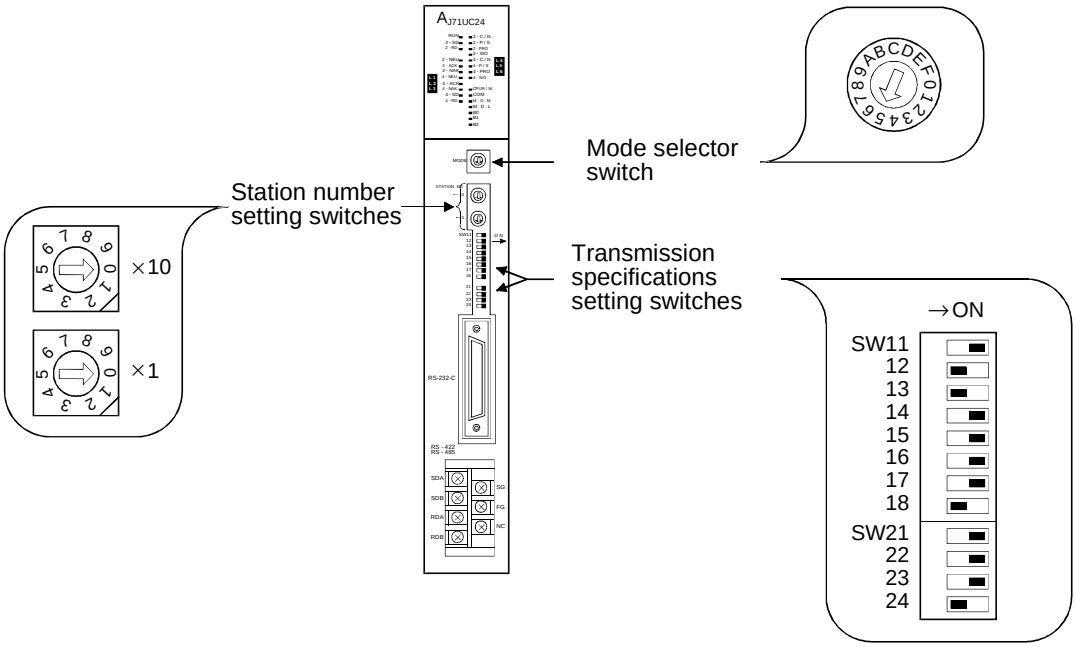

- A2CCPUC24



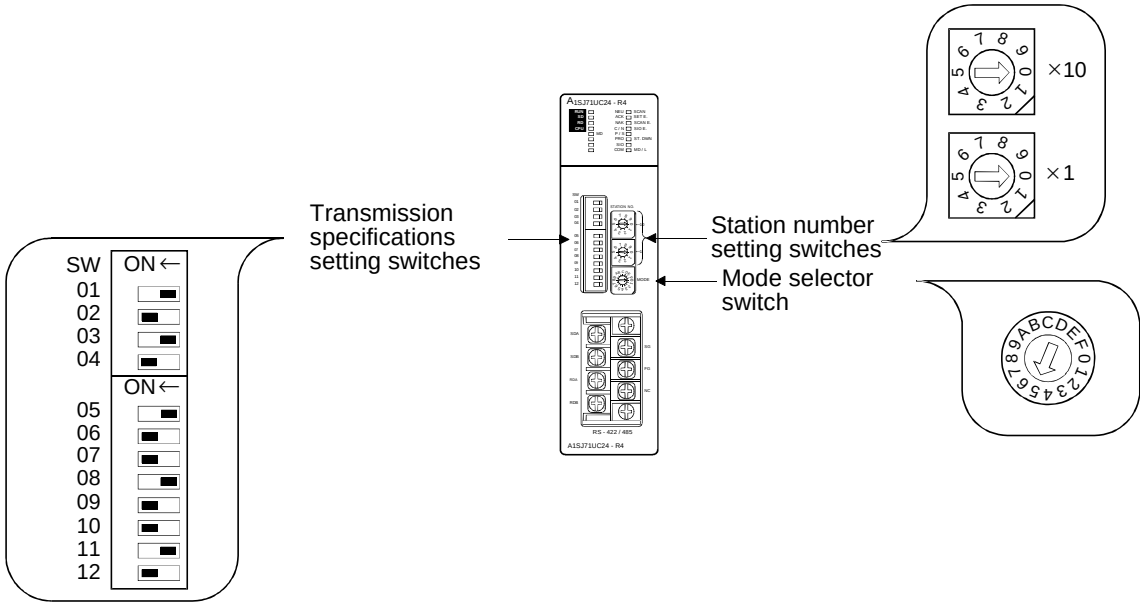
### 9.3.3 Setting Examples

#### 1) RS-422 connection

a) When the AJ71UC24 is connected

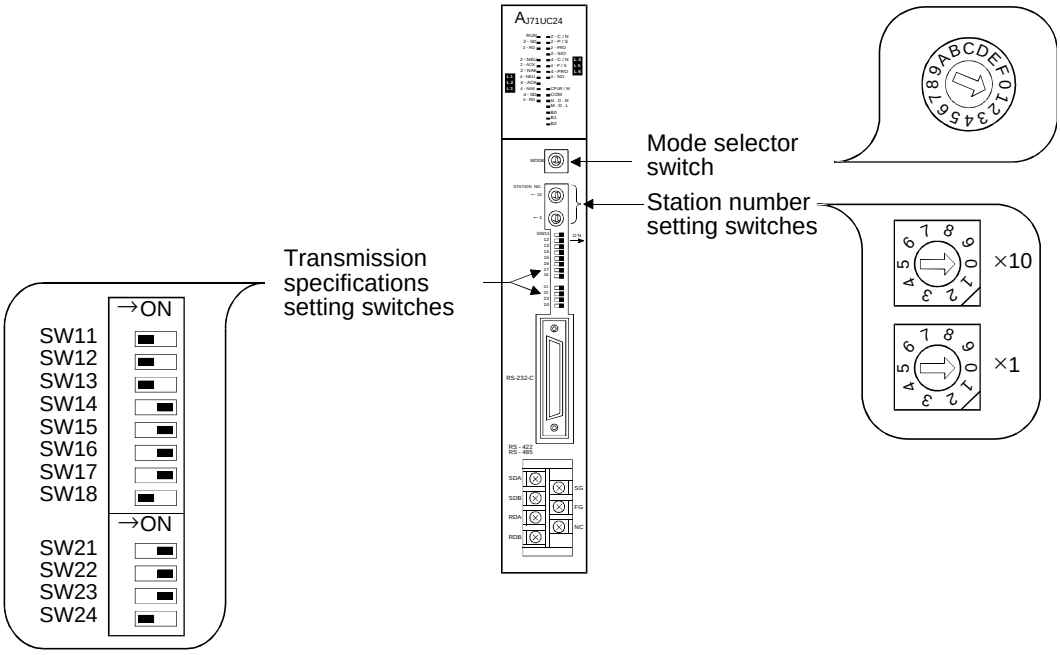



b) When the A1SJ71UC24-R4/A1SJ71C24-R4 is connected

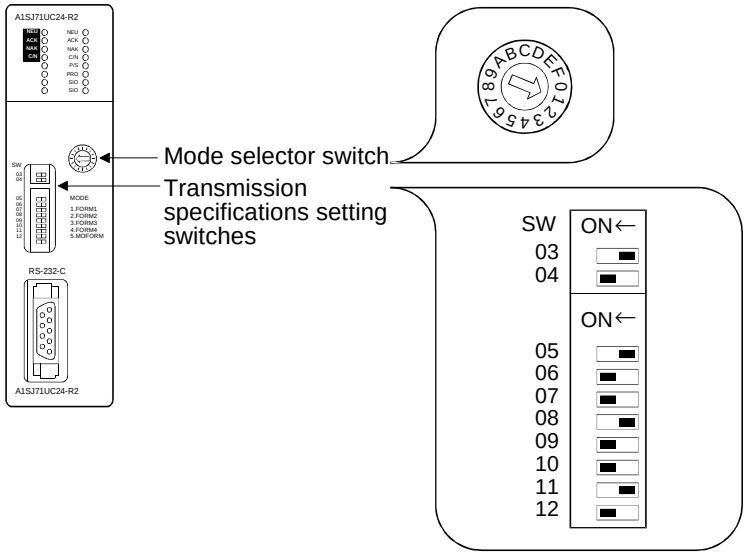


**2) RS-232C connection**

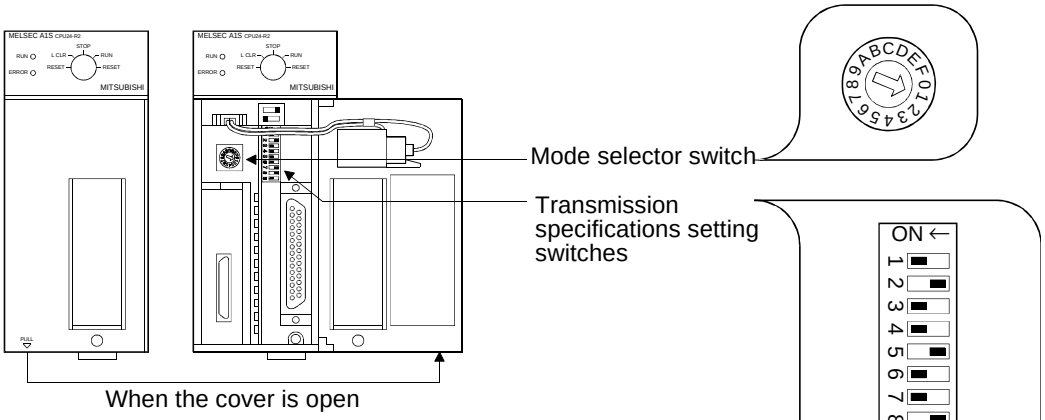
a) When the AJ71UC24 is connected



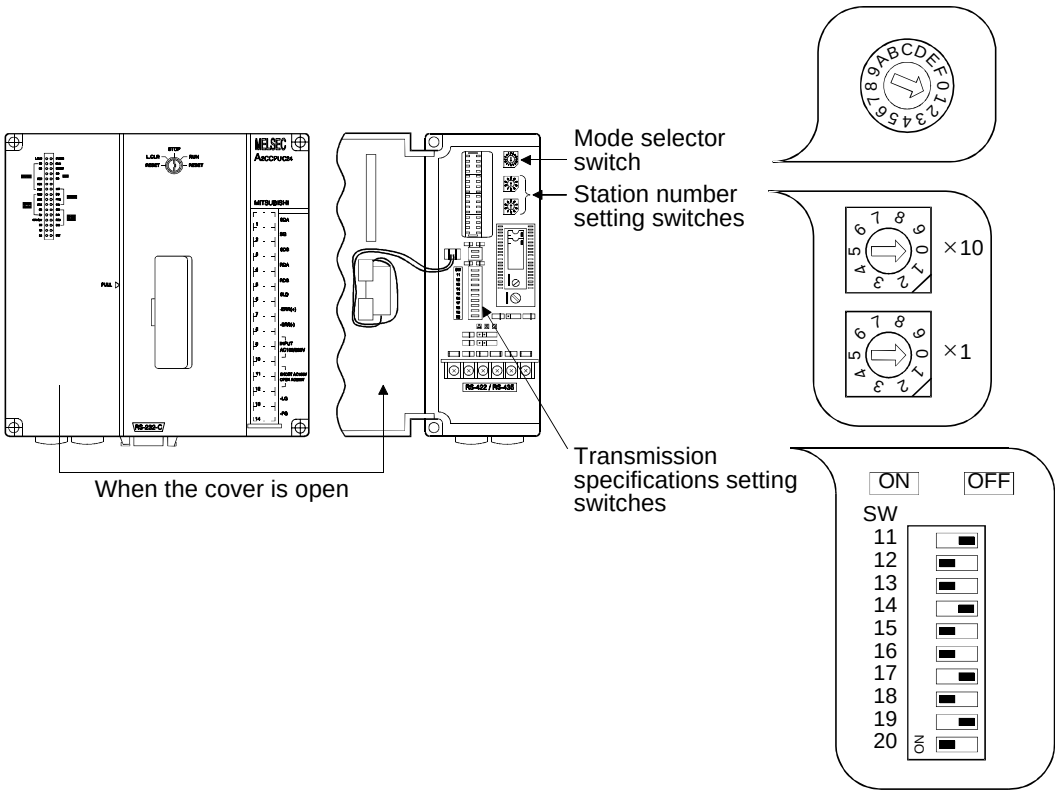

b) When the A1SJ71UC24-R2/A1SJ71C24-R2 is connected



c) When the A1SCPU24-R2 is connected




d) When the A2CCPUC24 is connected



### 9.3.4 Used Connectors and Connector Covers

**1) Connectors on the GOT side**

- For the shape of the connector of the cable on the GOT side (excluding the Handy GOT), refer to chapter 4.
- For the shape of the connector of the cable dedicated to the Handy GOT, refer to chapter 5.

**2) Connector on the computer link unit side**

The computer link unit described in this manual is equipped with the RS-232C port having the following number of pins.
The RS-422 port is provided in a terminal block form.

| Computer link unit model name | RS-232C connector shape | Model name | Included with |
|---|---|---|---|
| AJ71UC24 | 25-pin, female | 17L-10250-27-D9AC(manufactured by DDK) Screw-tightening type | – |
| A1SJ71UC24-R2,A1SJ71C24-R2 | 9-pin, female | 17L-10090-27-D9AC (manufactured by DDK) Screw-tightening type | ✓ |
| A1SCPUC24-R2 | 9-pin, female | | ✓ |
| A2CCPUC24 | 9-pin, female | | ✓ |

A connector to be used for the port in the computer link unit may be included in a package.

### 9.3.5 Cable Specifications and Length

**1) Cable for RS-422 (excluding the Handy GOT)**

Any cable satisfying the following specifications can be used.

| Item | Description |
|---|---|
| Cable type | Shielded cable |
| Number of pairs | 3P |
| Conductor resistance (at 20°C) | 88.0Ω/km or less |
| Insulation resistance | 10000MΩ/km or more |
| Withstand voltage | 500V DC for 1 min |
| Electrostatic capacity (at 1kHz) | Average: 60nF/km or less |
| Characteristics impedance (at 100kHz) | 110±10Ω |

Recommended cable

| | |
|---|---|
| SPEV(SB)-MPC-0.2 × 3P | MITSUBISHI CABLE INDUSTRIES, LTD |
| SPEV(SB)-0.2 × 3P | |

* The recommended cables SPEV(SB)-MPC-0.2 × 3P and SPEV(SB)-0.2 × 3P are equivalent in the electrical characteristics, but partially different in the outside dimension and the internal wire color.

**2) Cable for RS-232C (excluding the Handy GOT)**

Use a cable less than 15m (49' 3") in conformance to the RS-232C standard.

Recommended cable

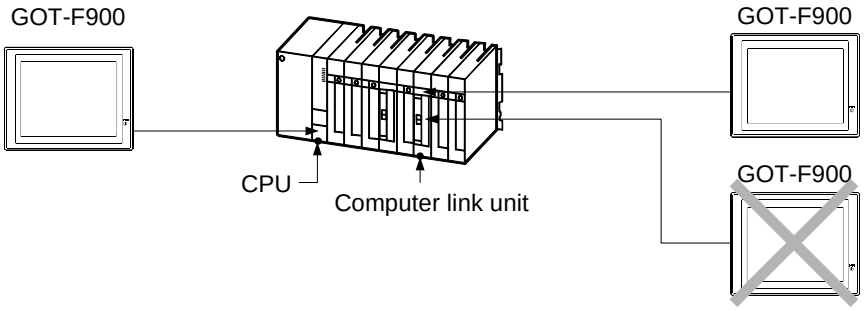
| | |
|---|---|
| 7/0.127□P HRV-SV<br>□: Specifies the number of pairs.<br>Example: In the case of 13 pairs, "7/0.127 13P HRV-SV" | RS-232C cable manufactured by Oki Electric Cable Company, Limited. |

## 9.4 Caution on Use of MELSEC-A Series PLC

When using the GOT-F900 connected to the A Series PLC, observe the following caution on use.

### 9.4.1 Caution when the GOT-F900 is connected to the computer link unit

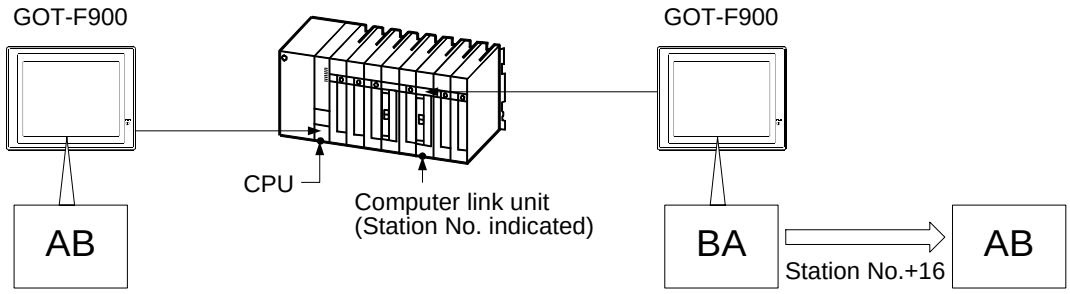
When the GOT is connected, the CH1 and the CH2 of the computer link unit cannot be used at the same time.
Accordingly, only one GOT unit can be connected to the computer link unit.




However, a GOT unit or a personal computer can be connected to the RS-422 port of the ACPU while the computer link unit has one GOT unit.

### 9.4.2 Caution when displaying the Ascii code

When a GOT-F900 is connected to the computer link unit, Ascii data created using GT Designer or DU/WIN is displayed in reverse order as shown below (lower character on the left, upper character on the right).




When connecting two or more GOTs, set the station number on the GOT connected to the computer link unit so that the characters displayed on all the GOT units look the same:

**Station number of computer link unit + 16 = Set Value on GOT-F900 (DST STATION #)**

## 9.5 Setting of Connected Equipment for GOT

The A Series PLC connection parameters can be set using the GOT-F900 Series and the screen creation software GT Designer and DU/WIN.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE".<br>c) Set the following.<br>PLC TYPE:A SERIES<br>CONNECTION:CPU PORT (RS-422)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 15<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

When the main menu screen change operation is enabled.

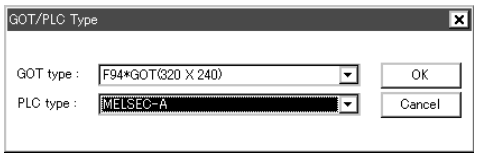
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE".<br>e) Set the following.<br>PLC TYPE: A SERIES<br>CONNECTION:CPU PORT (RS-422)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 15<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

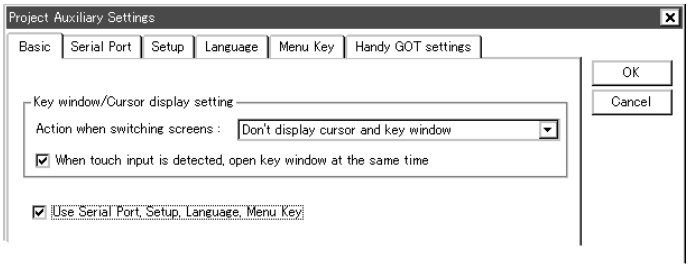
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.
- The "PLC type" selection item display varies depending on the OS version as follows.

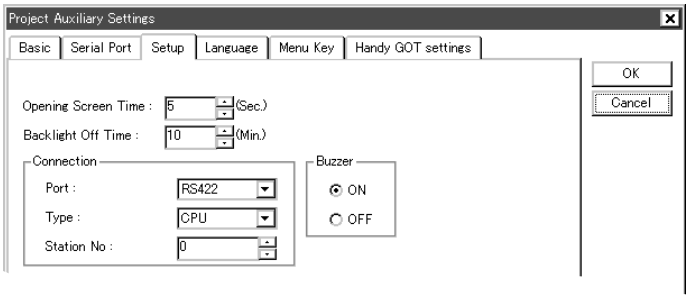
| GOT-F900 | | "PLC TYPE" selection item display in GOT | | |
|---|---|---|---|---|
| | | A SERIES | A, QnA SERIES | A SERIES *1<br>QnA, Q SERIES |
| OS version | F940WGOT | – | – | 1.00 or later |
| | F940GOT, Handy GOT | 1.00 or later | 3.00 or later | 4.10 or later |
| | F930GOT-K | – | – | 4.60 or later |
| | F930GOT | 1.00 or later | 2.00 or later | 2.20 or later |
| | F920GOT-K | – | – | 1.00 or later |
| Connection setting availability | | Available | Available | Available (Select "A SERIES".) |

*1 Note that the selection item display is changed from "A, QnA SERIRES" to "A SERIES" and "QnA, Q SERIES".

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open the GT Designer.<br><br>b) Click the [New] button.<br> 

<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>F920GOT(128 × 64)<br>PLC type: MELSEC-A<br><br>Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
<tr><td>F920GOT(128×64)</td><td>F920GOT-K</td></tr>
</table>
Click [OK].<br><br>d) Set CPU direct connection (RS-422)/link connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

<br>Click the "Setup" tab.<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br><br>

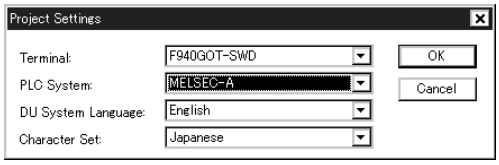
<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td></td><td>In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>LINK<br>DST Station No. (Station No.) : 00 to 15<br>GOT Station No. (–) : –<br>Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Port</th><th>Type</th></tr>
<tr><td rowspan="2">RS-422</td><td>CPU</td></tr>
<tr><td>LINK</td></tr>
<tr><td>RS-232C</td><td>LINK</td></tr>
</table></td><td></td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type".</td><td>The "Select project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.</td></tr>
</table>

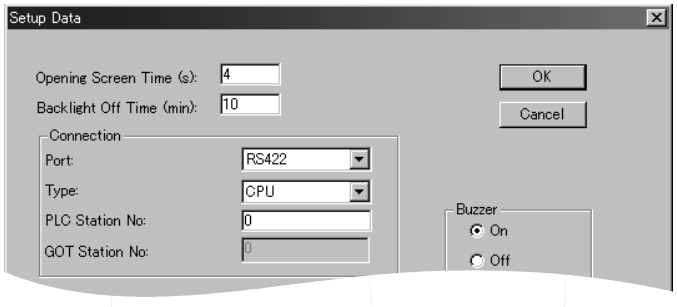
- The "PLC type" selection item display varies depending on the software version as follows.

| GT Designer | "PLC type" selection item display in GT Designer | | |
|---|---|---|---|
| | MELSEC-A | MELSEC-A, QnA | MELSEC-A *1<br>MELSEC-QnA, Q |
| Version | SW1-A or later | SW2-A or later | SW4-F or later |
| Connection setting availability | Available | Available | Available (Select "MELSEC-A".) |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open DU/WIN.<br><br>
b) On the menu, select "File"-"New".<br>


<br>
c) Set the following.<br>
Terminal: F940WGOT-TWD (V)(H)<br>
F940GOT-LWD<br>
F940GOT-SWD<br>
F930GOT-BWD<br>
F920GOT-BBD5-K<br>
PLC System: MELSEC-A<br><br>
Select "Terminal" in accordance with the LCD display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT (blue)<br>F930GOT-K (blue)</td></tr>
<tr><td>F920GOT-BBD5-K</td><td>F920GOT-K (blue)</td></tr>
</table>
</td><td>The "Project settings" dialog box appears.</td></tr>
<tr><td></td><td>
d) Set CPU direct connection (RS-422)/link connection (RS-422/RS-232C) of the GOT-F900.<br>
On the menu, select "View/Project"-"System Settings"-"Setup Data".<br>


<br>
e) Set the following.<br>
Port: RS-422<br>
RS-232C<br>
Type: CPU<br>
LINK<br>
DST Station No. (Station No.): 00 to 15<br>
GOT Station No. (–) : –<br><br>
Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Port</th><th>Type</th></tr>
<tr><td rowspan="2">RS-422</td><td>CPU</td></tr>
<tr><td>LINK</td></tr>
<tr><td>RS-232C</td><td>LINK</td></tr>
</table>
</td><td>The "Setup Data" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open DU/WIN. | |
| | b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed. | The "Open" dialog box appears. |
| | d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above. | The "Project settings" dialog box appears. |

- The "PLC" selection item display varies depending on the OS version as follows.

| DU/WIN | "PLC System" selection item display in DU/WIN | | |
|---|---|---|---|
| | MELSEC-A | MELSEC-A, QnA | MELSEC-A *1<br>MELSEC-QnA, Q |
| Version | 2.00 or later | 2.30 or later | 2.40 or later |
| Connection setting availability | Available | Available | Available (Select "MELSEC-A".) |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

## 9.6 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the A Series PLC.

### 1) Cable for the GOT and the A Series PLC

F920GOT-K

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>A CPU direct connection<br>Prepared by the user<br>(Cable length 3m (9'10") or less)<br><br>Resistance per wire: 0.67 Ω or less<br>(Approximately AWG 28 or thicker) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(3)<br>(3)–(4)<br>(4)–(20)<br>(5)–(7)<br>(6)–(15)<br>(7)–(16)<br>(8)–(17)<br>(9)–(12)<br>(8)–(21) | A Series<br>1 13<br>14 25<br>25-pin D-Sub, male |

F930GOT/F930GOT-K/F940GOT/F940WGOT

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>A CPU direct connection<br>FX-40DU-CAB<br>FX-40DU-CAB-10M<br>FX-40DU-CAB-20M<br>FX-40DU-CAB-30M<br>FX-50DU-CABL | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(3)<br>(3)–(4)<br>(4)–(5)<br>(5)–(7)<br>(6)–(15)<br>(7)–(16)<br>(8)–(17)<br>(9)–(18)<br>(8)–(21) | A Series<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | RS-422 connection<br>A computer link | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | FG(class D grounding)–FG(class D grounding)<br>(1)–RXD+(RDA)<br>(6)–RXD-(RDB)<br>(2)–TXD+(SDA)<br>(7)–TXD-(SDB)<br>(5)–SG(GND)<br>Signal name of computer link | Terminal block<br>Computer link unit side (PLC side) |
| c) | RS-232C connection<br>A computer link<br>F2-232CAB-1<br>(The connection diagram is partially different.) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)–FG(class D grounding)<br>(2)–(2)SD(TXD)<br>(3)–(3)RD(RXD)<br>(7)–(4)RS(RTS)<br>(8)–(5)CS(CTS)<br>(6)–(6)DR(DSR)<br>(5)–(7)SG(GND)<br>(8)CD(DCD)<br>(4)–(20)ER(DTR)<br>Signal name of computer link | Computer link unit side (PLC side)<br>1 13<br>14 25<br>25-pin D-Sub, male |
| d) | RS-232C connection<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)–FG(class D grounding)<br>(1)–(1)CD(DCD)<br>(2)–(2)RD(RXD)<br>(3)–(3)SD(TXD)<br>(4)–(4)DR(DTR)<br>(5)–(5)SG(GND)<br>(6)–(6)DR(DSR)<br>(7)–(7)RS(RTS)<br>(8)–(8)CS(CTS)<br>Signal name of computer link | Computer link unit side (PLC side)<br>1 5<br>6 9<br>9-pin D-Sub, male |

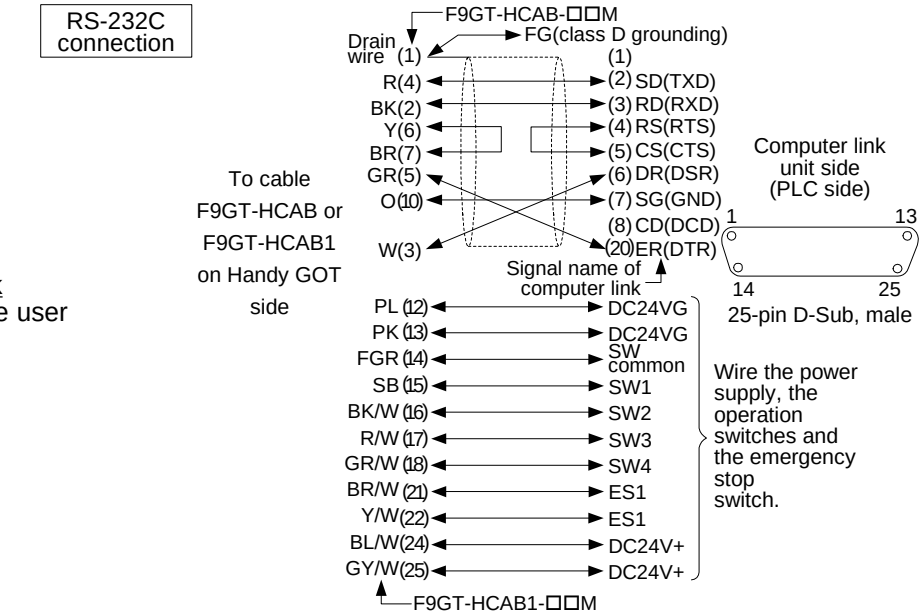
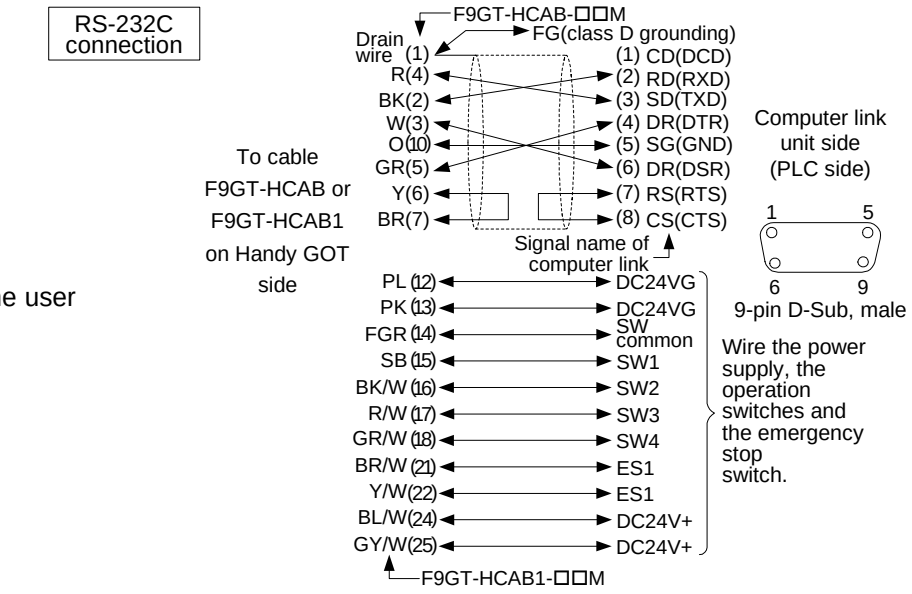
**2) Cable for the Handy GOT and the A Series PLC**

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | F9GT-HCAB3-150<br>RS-422 connection<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>(2)→(2)<br>(3)→(15)<br>(4)→(4)<br>(5)→(17)<br>(6)→(3)<br>(7)→(16)<br>(8)→(5)<br>(9)→(18)<br>(10)→(7)<br>(8)<br>(21)<br>(12)→DC24VG<br>(13)→DC24VG<br>(14)→SW common<br>(15)→SW1<br>(16)→SW2<br>(17)→SW3<br>(18)→SW4<br>(21)→ES1<br>(22)→ES1<br>(24)→DC24V+<br>(25)→DC24V+<br>Wire the power supply, the operation switches and the emergency stop switch. | A Series<br>1 13<br>14 25<br>25-pin D-Sub, male |
| d) | A computer link<br>Prepared by the user<br>RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>BK(2)→RXD+(RDA)<br>W(3)→RXD-(RDB)<br>Y(6)→TXD+(SDA)<br>BR(7)→TXD-(SDB)<br>O(10)→SG(GND)<br>Signal name of computer link<br>PL(12)→DC24VG<br>PK(13)→DC24VG<br>FGR(14)→SW common<br>SB(15)→SW1<br>BK/W(16)→SW2<br>R/W(17)→SW3<br>GR/W(18)→SW4<br>BR/W(21)→ES1<br>Y/W(22)→ES1<br>BL/W(24)→DC24V+<br>GY/W(25)→DC24V+<br>F9GT-HCAB1-□□M<br>Terminal block<br>Computer link unit side (PLC side)<br>Wire the power supply, the operation switches and the emergency stop switch. | |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | A computer link<br>Prepared by the user | RS-232C connection |  |
| f) | Prepared by the user | RS-232C connection |  |

## 9.7 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the A Series PLC.
The slightly different messages may be displayed on the F920GOT-K.

**1) GOT-F900**

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen by a touch key *1.<br><br>*1 No touch key is available on the F920GOT-K. | The power of the A Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the A Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the A Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the A Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the A Series PLC was referenced.<br>(Example: While an A1S Series PLC is connected, a device exists only in the AnU Series PLC is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected A Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | When a PLC is not connected, the GOT defaults to the A mode.<br><br>• Cause<br>Check for the A or AnU Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the changeover destination screen (excluding the head screen) is beyond the range for the A Series.<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | A device that does not exist in the A Series PLC was referenced. (Example: While the A1S Series PLC was connected, a device provided only in the AnU Series PLC was specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected A Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | | |
| | While the A Series PLC is not connected, the connection mode for the A Series PLC is selected.<br><br>• Cause<br>Check for the A or AnU Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the head screen is beyond the range for the A Series.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later | From first product |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 | – |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | Programs and device set values of the A Series PLC cannot be changed.<br>• Causes<br>PLC Password protection is on.<br>• Countermeasures<br>Enter the keywords by "SELECT MODE"-"OTHER MODE"-"ENTRY CODE". | From first product | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Software such as GX Developer and FX/WIN | In the personal computer connected to the GOT-F900, sequence programs cannot be monitored or transferred.<br>Communication with the sequence software is disabled. An error message is displayed. | A PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>For monitoring or transferring sequence programs, set a bar code reader to invalid and a printer to "DON'T USE".<br>If the PLC is connected, select the GOT-F900 equipped with two built-in RS-232C channels. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. |
| Screen creation software | In the personal computer connected to the GOT-F900, screen data cannot be transferred.<br>Communication with the screen creation software is disabled. An error message is displayed. | A computer link, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set to invalid and a printer to "DON'T USE". |
| | | A personal computer is connected, and the software for PLC (such as GPP/W and FX/WIN) and the screen creation software are used at the same time.<br><br>• Cause<br>Program transfer or monitoring is executed by the PLC software.<br>• Countermeasures<br>Terminate program transfer or monitoring by the PLC software. If the error status still continues, shut down the PLC. Otherwise, shut down the personal computer, start it up again, then start up only the screen creation software. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 10. Connection of MELSEC-QnA Series PLC

This chapter explains connection of the GOT-F900 Series display unit to the QnA Series PLC.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the QnA Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 10.1 |
| System Configuration | You can select the configuration between the GOT and the QnA Series PLC/computer link unit as well as proper cables. | 10.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| QnACPU Selection in Direct Connection | In the QnA computer link, the following setting is required.<br>When QnA connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the QnA Series PLC. | – |
| Setting in QnA Computer Link Connection | You can learn the communication specifications and the setting.<br>Setting of QnA computer link: The contents of setting of computer link — 10.3.1<br>Setting examples: Switch setting in each computer link — 10.3.2 | 10.3 |
| Caution on Use of MELSEC-QnA Series PLC | You can learn the restrictions in connecting the GOT to the QnA Series PLC. | 10.4 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 10.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for QnA Series PLC/GOT connection | 10.6 |
| Troubleshooting | Description of errors and how to fix them | 10.7 |

## 10.1 System Condition

When connecting the QnA Series PLC, check the COM port designation, the OS version of the GOT-F900, and the applicable version of the screen creation software.

Compatibility when connecting QnA Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | △ | – | ✓ | – | 1.00 | SW5-26C | 2.70 |
| F930GOT | ✓ | ✓ | ✓ | ✓ | 2.00 | SW2-A | 2.30 |
| F930GOT-K | ✓ | ✓ | ✓ | ✓ | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | ✓ | 3.00 | SW2-A | 2.30 |
| F940WGOT | ✓ | ✓ | ✓ | ✓ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | –*1 | 3.00 | SW2-A | 2.30 |
| F943 Handy GOT | – | ✓ | ✓ | –*1 | 3.00 | SW2-A | 2.30 |

- "△" in the table indicates that only CPU direct connection is available, and computer link connection is not available.
- Connection of two or more GOT units is possible only in QnACPU direct connection and QnA computer link connection. It is not possible in A computer link connection.
- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

### 10.1.1 Restriction When Computer Link Unit for A Series is Used

When the computer link unit for the A Series shown in the table below is attached to the QnA Series CPU, then the GOT-F900 Series display unit is connected to the QnA Series CPU, there is restriction in the available device range.

- Refer to the description on the MELSEC-QnA Series in section 3.3.

| Computer link unit (There is restriction.) | Serial data communication unit (There is no restriction.) |
|---|---|
| AJ71UC24<br>A1SJ71UC24-R4 | AJ71QC24<br>AJ71QC24-R4 |

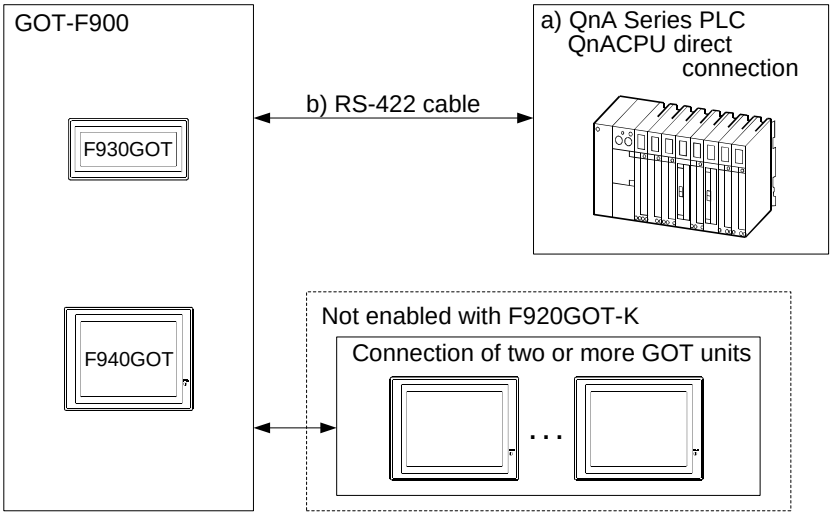
## 10.2 System Configuration

The QnA Series PLC can be connected to the GOT through a computer link connection (RS-422 or RS-232C) or directly via RS-422. This section explains the cables and options required in such a system.

### 10.2.1 Configuration for Direct Connection (RS-422)

Connect the GOT-F900 to the programming port of the QnA Series PLC.
Program transfer and monitoring are available in the GOT-F900 Series using the built-in two-port interface function through connection of a personal computer to the RS-232C port. (excluding the F920GOT-K)

**1) F920GOT-K/F930GOT/F930GOT-K/F940GOT/F940WGOT**




F920GOT-K

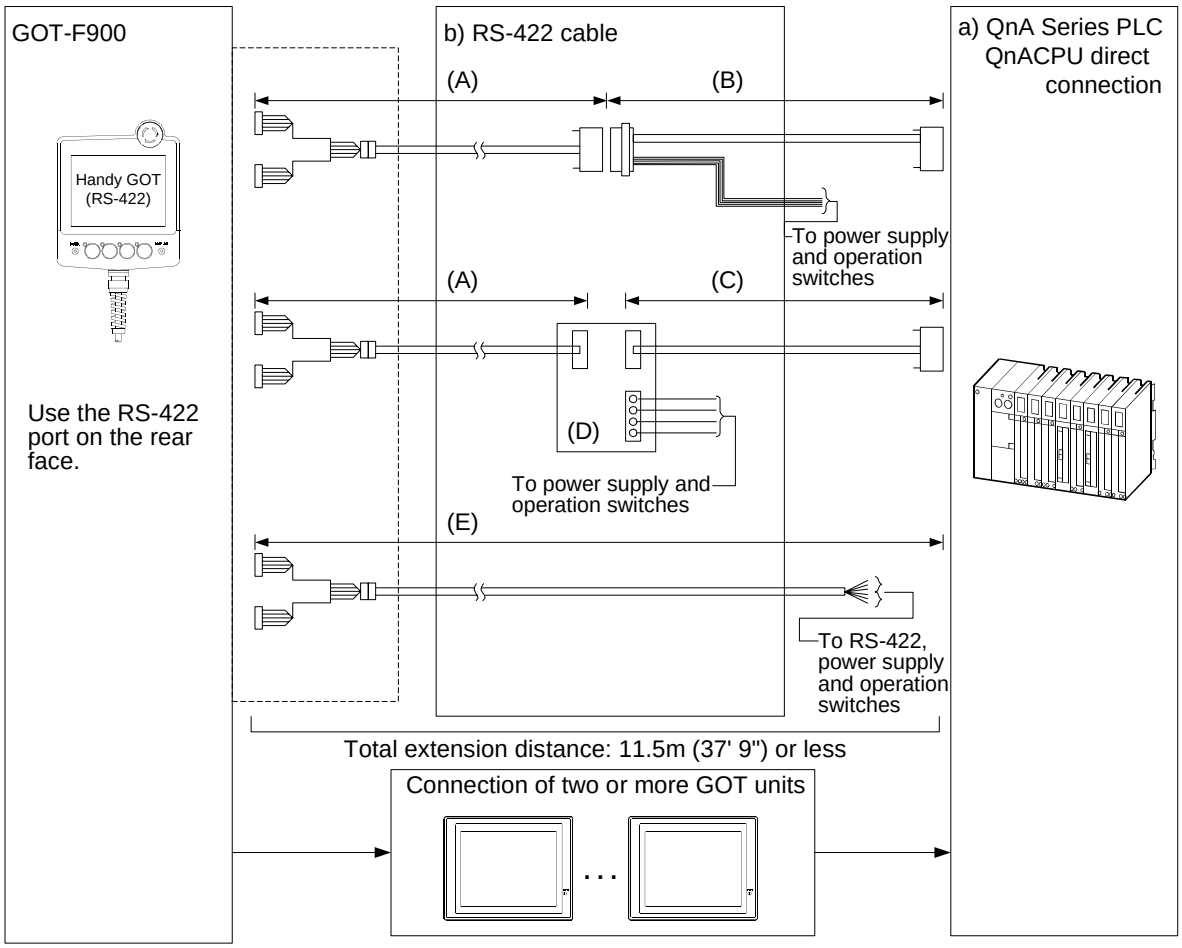
| a) QnA Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| QnACPU direct connection (25-pin D-Sub) | Prepared by the user. | Make sure the total cable extension distance is 3m (9’ 10”) or less. |

F930GOT/F930GOT-K/F940GOT/F940WGOT

| a) QnA Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| QnACPU direct connection (25-pin D-Sub) | FX-40DU-CAB<br>FX-40DU-CAB-□□M<br>FX-50DU-CABL | "□□" in "FX-40DU-CAB-□□M" indicates the cable length. |

- Only one of the cables listed in column b) is required for connection.
- In the F930GOT and the F930GOT-K, the FX-50DU-CABL right-angle type (L type) cable can not be used.

### 2) F940 Handy GOT



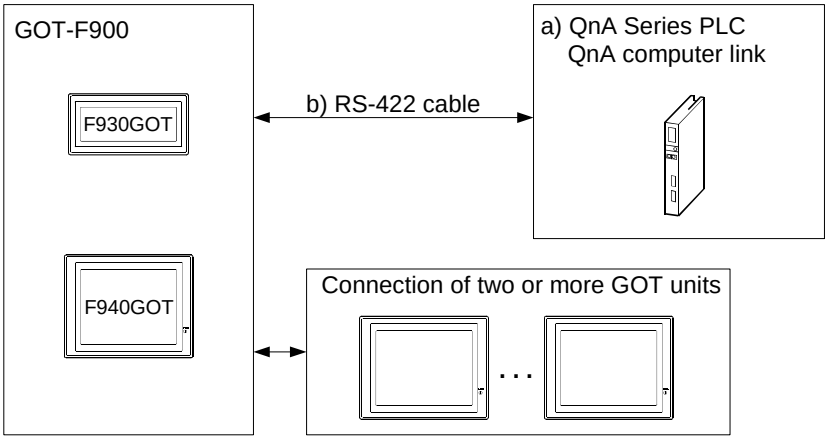

| a) QnA Series PLC | b) RS-422 cable | Remarks |
|---|---|---|
| QnACPU direct connection (25-pin D-Sub) | (A) F9GT-HCAB-□□M<br>(B) F9GT-HCAB3-150<br>(C) FX-40DU-CAB<br>(D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | |

- Make sure that the total cable extension distance "(A) + (B)" or (E) is 11.5m (37' 9") or less.

## 10.2.2 Configuration for QnA Computer Link Connection (RS-422)

The GOT-F900 and the computer link unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of computer link units connected to the QnA Series PLC can be connected.
Because the programming port of the PLC is not occupied, peripheral programming equipment (dedicated equipment) for PLC can be connected for monitoring and transfer of sequence programs.

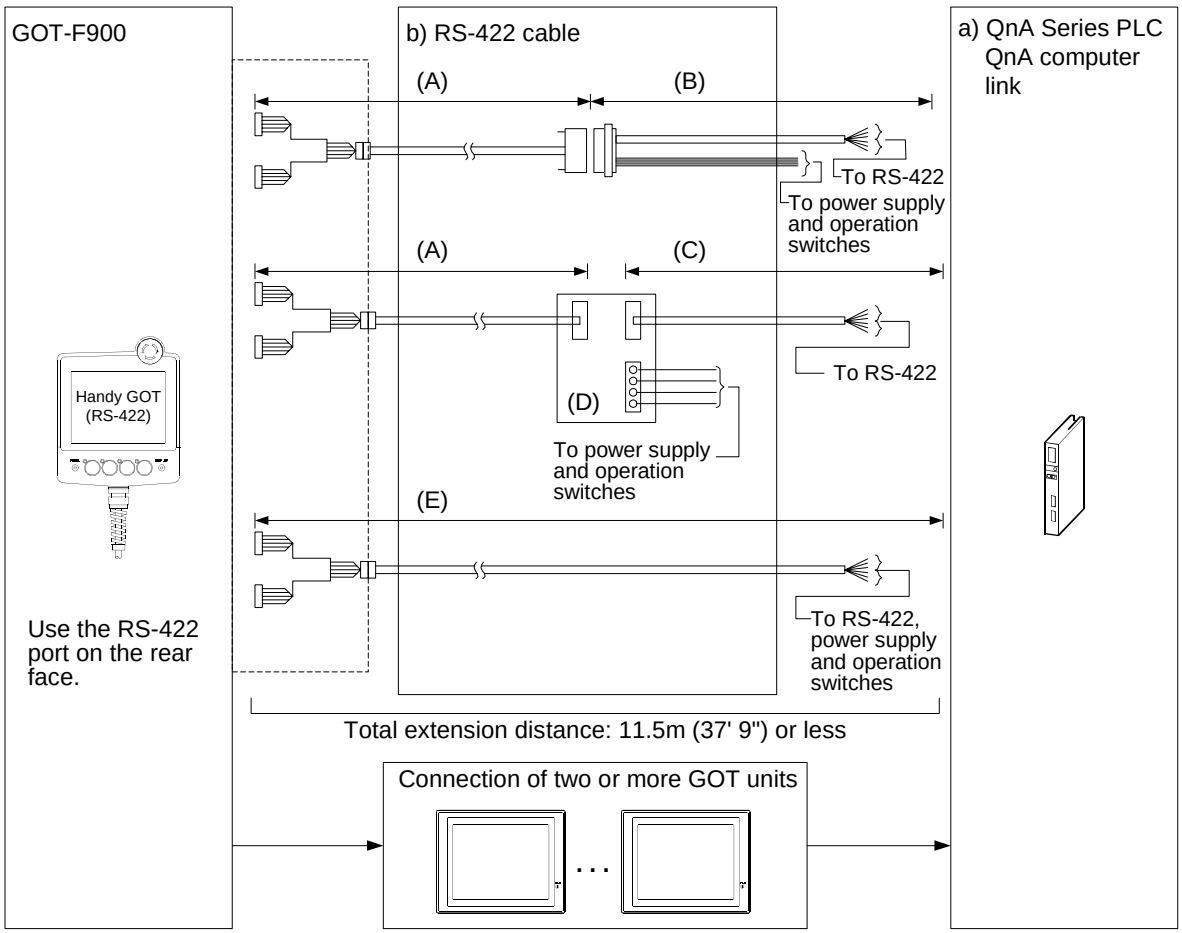
### 1) F930GOT/F930GOT-K/F940GOT/F940WGOT




| a) QnA Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| AJ71QC24-R4 | 25-pin D-Sub | Prepared by the user. | Make sure the total cable extension distance is 30m (98' 5") or less. |
| AJ71QC24<br>A1SJ71QC24 | Terminal block | | Make sure the total cable extension distance is 30m (98' 5") or less. |
| AJ71UC24<br>A1SJ71UC24-R4 | Terminal block | | Connection of two or more GOT units is not possible.<br>Make sure the total cable extension distance is 30m (98' 5") or less. |

- Applicable QnA Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



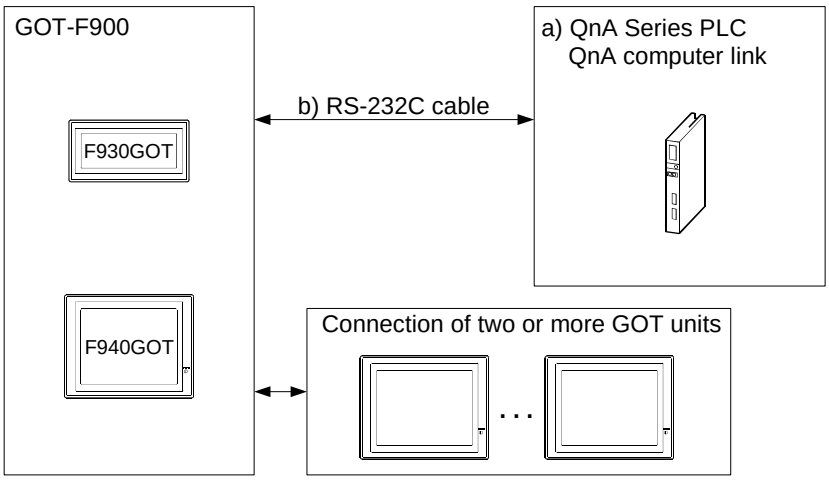

| a) QnA Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| AJ71QC24-R4 | 25-pin D-Sub | (A) F9GT-HCAB-□□M | |
| AJ71QC24<br>A1SJ71QC24 | Terminal block | (B) Prepared by the user.<br>(C) Prepared by the user. | |
| AJ71UC24<br>A1SJ71UC24-R4 | Terminal block | (D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | Connection of two or more GOT units is not possible. |

- Applicable QnA Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.
- Make sure that the total cable extension distance "(A) + (B)" or (E) is 11.5m (37' 9") or less.

### 10.2.3 Configuration for QnA Computer Link Connection (RS-232C)

The GOT-F900 and the computer link unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of computer link units connected to the QnA Series PLC can be connected.
Because the programming port of the PLC is not occupied, peripheral programming equipment (dedicated equipment) for PLC can be connected for monitoring and transfer of sequence programs.

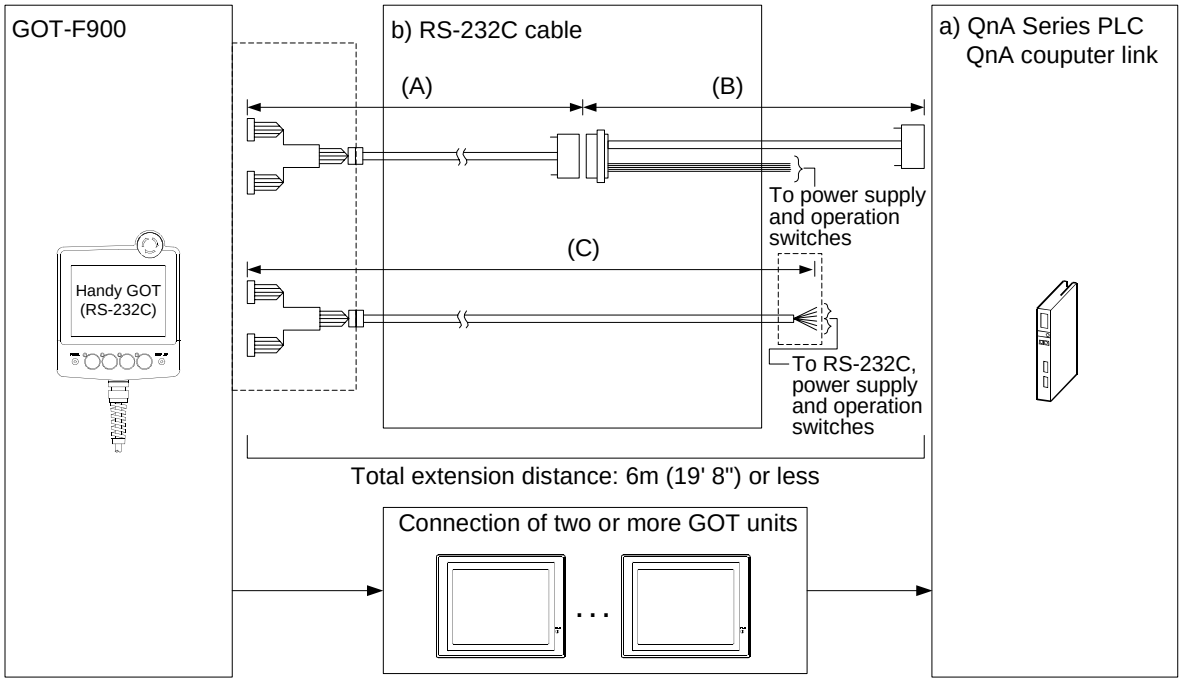
#### 1) In the case of F930GOT/F930GOT-K/F940GOT/F940WGOT




| a) QnA Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| AJ71QC24<br>AJ71QC24-R2 | 25-pin D-Sub | F2-232CAB-1 | |
| A1SJ71QC24<br>A1SJ71QC24-R2 | 9-pin D-Sub | Prepared by the user. | Make sure the total cable extension distance is 15m (49' 3") or less. |
| A1SJ71UC24-R2 | | | Make sure the total cable extension distance is 15m (49' 3") or less. |
| AJ71UC24 | 25-pin D-Sub | F2-232CAB-1 | |

- Applicable QnA Series PLC products in the column a) are computer link units equipped with built-in RS-232C interface.

### 2) F943 Handy GOT




| a) QnA Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| AJ71QC24<br>AJ71QC24-R2 | 25-pin D-Sub | (A) F9GT-HCAB-3M<br>(B) Prepared by the user. | |
| A1SJ71QC24<br>A1SJ71QC24-R2 | 9-pin D-Sub | (C) F9GT-HCAB1-3M | |
| A1SJ71UC24-R2 | | | Connection of two or more GOT units is not possible. |
| AJ71UC24 | 25-pin D-Sub | | |

- In the (C)F9GT-HCAB1-3M shown in the column "b) RS-232C cable", the end on the PLC side is loose wires.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 10.3 Setting in QnA Computer Link Connection

In QnA computer link connection, the switches in the computer link unit (shown in the following page) should be set as described below.

| Connected equipment [classification in manual] | Remarks |
|---|---|
| [QnACPU direct connection]<br>Port of QnA CPU, QnAS CPU | Refer to the following setting method. |
| [QnA computer link]<br>AJ71QC24(RS-422/RS-232C)<br>AJ71QC24-R2(RS-232C)<br>A1SJ71QC24(RS-422/RS-232C)<br>A1SJ71QC24-R2(RS-232C) | |
| [A computer link]<br>AJ71UC24(RS-422/RS-232C)<br>A1J71UC24-R4(RS-422)<br>A1J71UC24-R2(RS-232C)<br>AJ71UC24(RS-232C) | Refer to Chapter 9. |

### 10.3.1 Communication Setting Specifications

**1) Setting the mode selector switch**

Set the mode so that the COM port of the computer link unit connected to the GOT-F900 is set to the dedicated (MC) protocol format 5.

| COM port | Set value | Remarks |
|---|---|---|
| RS-422 | 5 | |
| RS-232C | 5 | |

**2) Setting the transmission specifications setting switches**

Set the transmission specifications setting switches of the computer link unit to realize the transmission specifications shown in the table below. For the switch setting method, refer to the manual of each computer link unit.

| Item | | Set value | Remarks |
|---|---|---|---|
| Transmission speed | | 19,200 bps | |
| Data format | Data bit | 8 bits | The setting is different from A computer link (7 bits). |
| | Parity bit | Provided (odd) | The setting is different from A computer link (provided, even). |
| | Stop bit | 1 bit | |
| | Sum check | Provided | |
| Write in RUN mode | | Possible | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

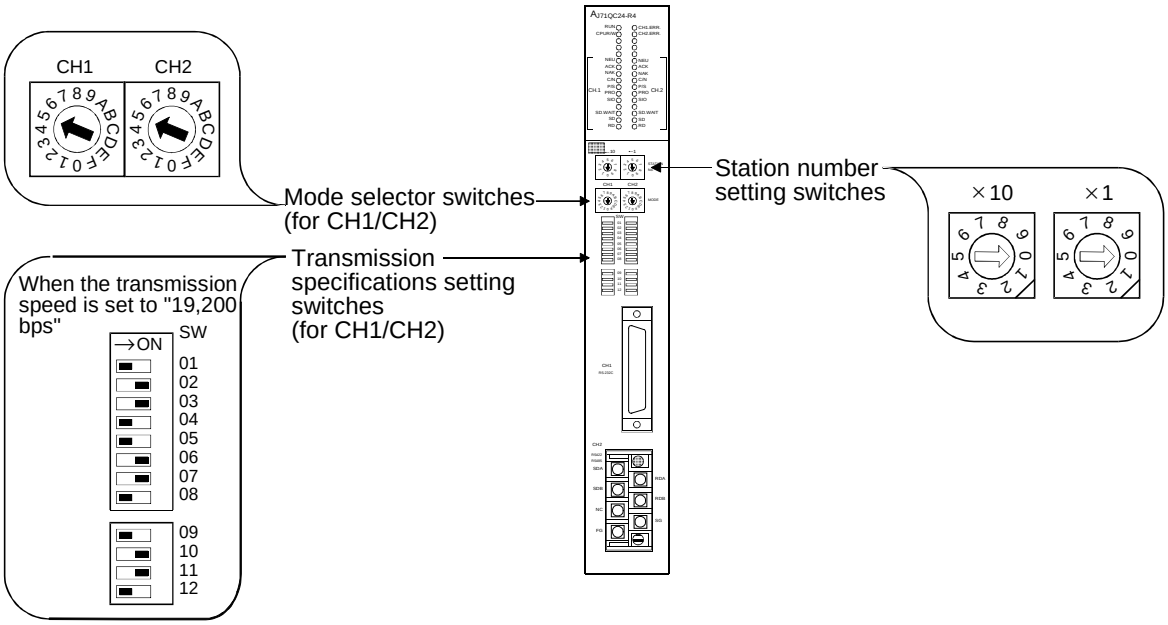
**3) Setting the station number setting switches**

Match the switches to 0H both in the GOT-F900 and in the computer link unit.

## 10.3.2 Setting Examples

### 1) RS-422 connection

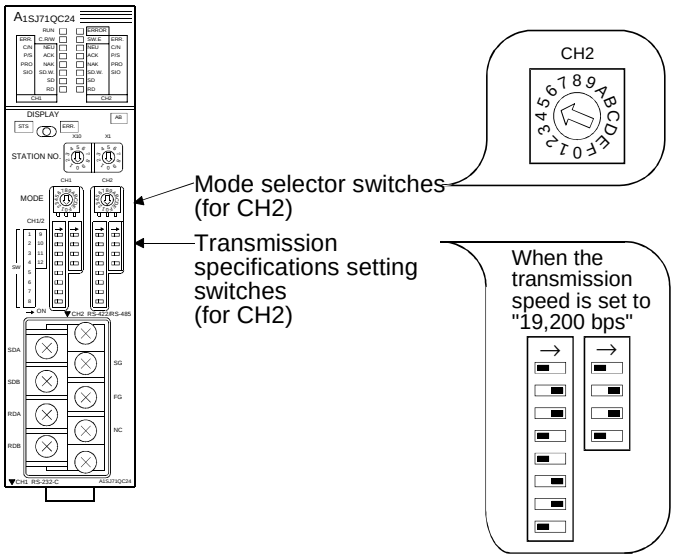
a) When the AJ71QC24(N)(-R4) is connected




**Important Point**

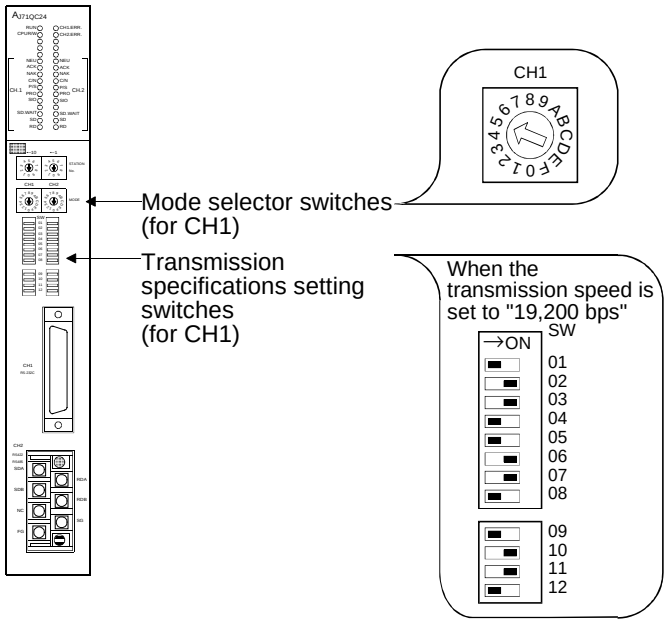
Set the mode selector switch for the unused channel to any value other than "0 (interlocking operation)".

b) When the A1SJQC24(N) is connected

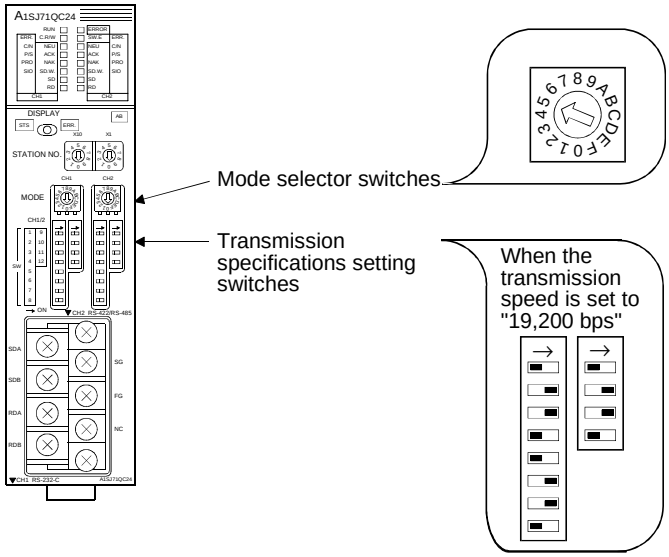


### 2) RS-232C connection

a) When the AJ71QC24(-R2) is connected




b) When the A1SJ71QC24(N)(-R2) is connected



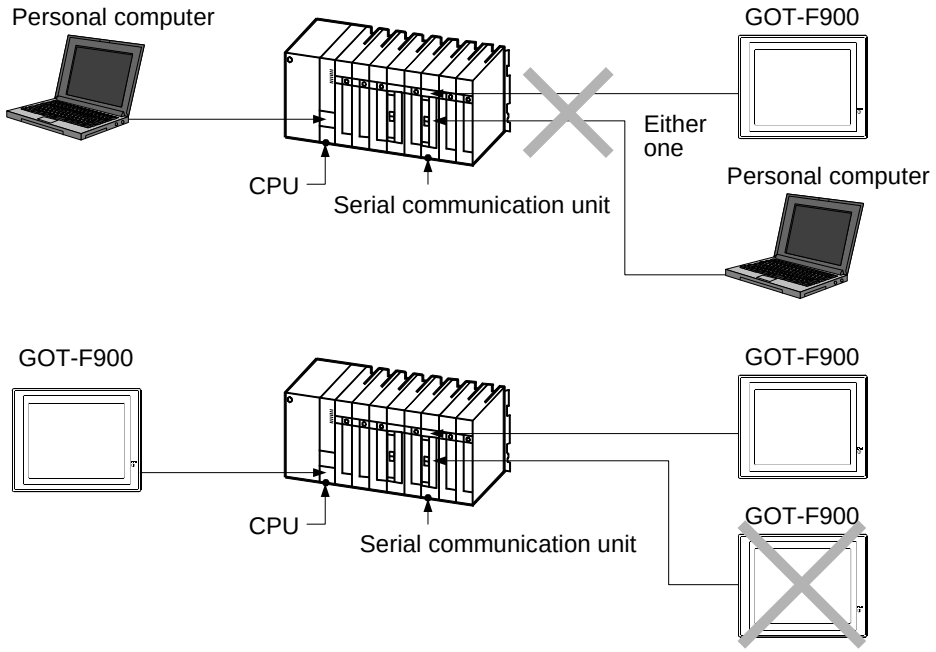
## 10.4 Caution on Use of MELSEC-QnA Series PLC

When using the GOT-F900 connected to the QnA Series PLC, observe the following caution on use.

### 10.4.1 Caution when the GOT is connected to the serial communication unit

**1) Simultaneous use of 2 ports**

When the GOT is connected, the CH1 and the CH2 of the serial communication unit cannot be used at the same time.
Accordingly, have in mind that connecting both of GOT unit and peripheral equipment for the GPP function or two GOT units to one serial communication unit is not allowed.




However, a GOT unit or a personal computer can be connected to the RS-422 port of the QnACPU while the computer link unit has one GOT unit.

**2) Compatible OS version of QnACPU**

When connecting a GOT unit to a serial communication unit or A Series computer link unit, the OS version of QnACPU needs to be later than the version indicated below. (Programming port of CPU is compatible with any version.)

| QnACPU | H/W version | S/W version | Production date |
|---|---|---|---|
| Q2A,Q3A,Q4A | D | A | Earlier than March, 1997 |
| Q2AS | A | L | Earlier than March, 1997 |

### 10.4.2 Caution when the GOT is connected to the computer link for the A Series PLC

- When connecting the GOT-F900 to the A computer link attached to the QnACPU, select A SERIES for PLC TYPE.
- For setting method for the A computer link or screen creation software, refer to Chapter 9.

## 10.5 Setting of Connected Equipment for GOT

The QnA Series PLC connection parameters can be set using the GOT-F900 Series and the screen creation software GT Designer and DU/WIN.

### Setting the Connection Type

Set the connection type in accordance with the connected equipment as shown in the table below.
When using the computer link unit for the A Series PLC, select A SERIES for PLC TYPE. (Refer to Chapter 9 for details.)
Have in mind that the computer link unit for the QnA requires CPU direct connection.

| Connected equipment [classification in manual] | GOT-F900 | DU/WIN | Remarks |
|---|---|---|---|
| | CONNECTION | Type | |
| [QnACPU direct connection]<br>Port of QnA CPU, QnAS CPU | CPU direct connection (RS-422) | | Programming port<br>Refer to the following setting method. |
| [QnA computer link]<br>AJ71QC24(RS-422/RS-232C)<br>AJ71QC24-R2(RS-232C)<br>A1SJ71QC24(RS-422/RS-232C)<br>A1SJ71QC24-R2(RS-232C) | CPU direct connection (RS-422) or<br>CPU direct connection (RS-232C) | | Communicates as programming port<br>Refer to the following setting method. |
| [A computer link]<br>AJ71UC24(RS-422/RS-232C)<br>A1J71UC24-R4(RS-422)<br>A1J71UC24-R2(RS-232C)<br>AJ71UC24(RS-232C) | Link connection (RS-422) or<br>link connection (RS-232C) | | Communicates as computer link.<br>Select A SERIES for PLC TYPE<br>Refer to Chapter 9. |

#### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br><br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE: QnA, Q SERIES (QnA CPU, QnA computer link)<br>A SERIES (A computer link)<br>CONNECTION: CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 15<br>GOT STATION # (–) : – | |

| Connection destination | PLC TYPE | CONNECTION | STATION # |
|---|---|---|---|
| QnACPU direct connection | QnA, Q Series | CPU PORT (RS-422) | 0 |
| QnA computer link unit | QnA, Q Series | CPU PORT (RS-422)<br>CPU PORT (RS-232C) | 0 |
| A computer link unit | A Series or QnA, Q Series | LINK PORT (RS-422)<br>LINK PORT (RS-232C) | 0 to 15 |

When the main menu screen change operation is enabled.

<table>
<tr><th>Operation</th><th>Display (screen name)</th></tr>
<tr><td>a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.)</td><td>The "SELECT MODE" screen appears.</td></tr>
<tr><td>b) Press "OTHER MODE" on the menu.</td><td>The "OTHER MODE" screen appears.</td></tr>
<tr><td>c) Press "SET-UP MODE" on the menu.</td><td>The "SET-UP MODE" screen appears.</td></tr>
<tr><td>d) Press "PLC TYPE".<br>e) Set the following.<br>PLC TYPE: QnA, Q SERIES (QnA CPU, QnA computer link)<br>A SERIES (A computer link)<br>CONNECTION: CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 15<br>GOT STATION # (–) : –</td><td>The "PLC TYPE" screen appears.</td></tr>
</table>

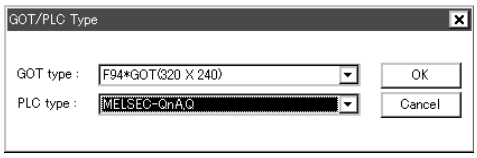
| Connection destination | PLC TYPE | CONNECTION | STATION # |
|---|---|---|---|
| QnACPU direct connection | QnA, Q Series | CPU PORT (RS-422) | 0 |
| QnA computer link unit | QnA, Q Series | CPU PORT (RS-422)<br>CPU PORT (RS-232C) | 0 |
| A computer link unit | A Series or A, QnA Series | LINK PORT (RS-422)<br>LINK PORT (RS-232C) | 0 to 15 |

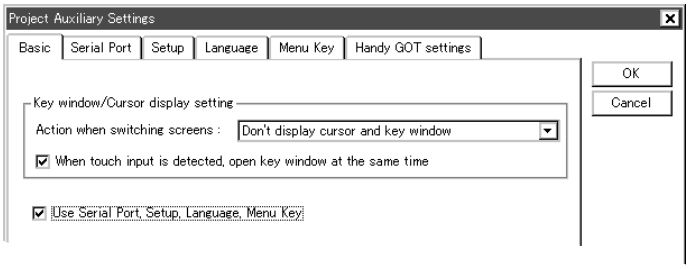
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.
- The "PLC type" selection item display varies depending on the OS version as follows.

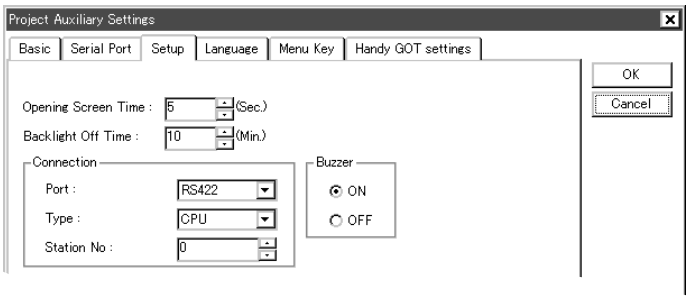
| GOT-F900 | | "PLC TYPE" selection item display in GOT | | |
|---|---|---|---|---|
| | | A SERIES | A, QnA SERIES | A SERIES *1<br>QnA, Q SERIES |
| OS version | F940WGOT | – | – | 1.00 or later |
| | F940GOT, Handy GOT | 1.00 or later | 3.00 or later | 4.10 or later |
| | F930GOT-K | – | – | 4.60 or later |
| | F930GOT | 1.00 or later | 2.00 or later | 2.20 or later |
| | F920GOT-K | – | – | 1.00 or later |
| Connection setting availability | | Not available (A computer link connection is available.) | Available | Available (Select "QnA, Q SERIES".) |

*1 Note that the selection item on the menu is changed from "A, QnA SERIES" to "A SERIES" and "QnA, Q SERIES".

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open the GT Designer.<br><br>b) Click the [New] button.<br> 

<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>F920GOT (128 × 64)<br>PLC type: MELSEC-QnA, Q (QnA CPU, QnA computer link)<br>MELSEC-A (A computer link)<br><br>Selection of "GOT type"<br><table><tr><th>GOT type</th><th>Model name</th></tr><tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr><tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr><tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr><tr><td>F920GOT(128×64)</td><td>F920GOT-K</td></tr></table>Click [OK].<br><br>d) Set CPU direct connection (RS-422/RS-232C)/link connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

<br>Click the "Setup" tab.<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br><br>

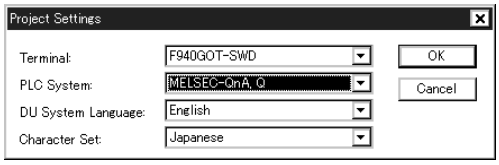
<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td></td><td>In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>LINK<br>DST Station No. (Station No.) : 00 to 15<br>GOT Station No. (–) : –<br><br>Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Connection destination</th><th>Port</th><th>Type</th></tr>
<tr><td>QnA CPU direct connection</td><td rowspan="3">RS-422</td><td>CPU</td></tr>
<tr><td>A computer link unit</td><td>LINK</td></tr>
<tr><td>QnA computer link unit</td><td>CPU</td></tr>
<tr><td>A computer link unit</td><td rowspan="2">RS-232C</td><td>LINK</td></tr>
<tr><td>QnA computer link unit</td><td>CPU</td></tr>
</table></td><td></td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open the GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type".</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.</td></tr>
</table>

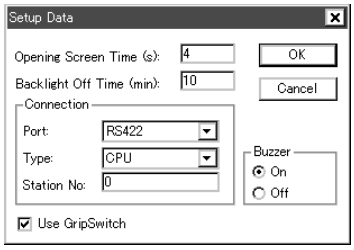
- The "PLC type" selection item display varies depending on the software version as follows.

| GT Designer | "PLC type" selection item display in GT Designer | | |
|---|---|---|---|
| | MELSEC-A | MELSEC-A,QnA | MELSEC-A *1<br>MELSEC-QnA,Q |
| Version | SW1-A or later | SW2-A or later | SW4-F or later |
| Connection setting availability | Not available<br>(A computer link connection is available.) | Available | Available<br>(Select "MELSEC-QnA,Q".) |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open the DU/WIN.<br><br>
b) On the menu, select "File"-"New".<br>


<br>
c) Set the following.<br>
Terminal: F940WGOT-TWD (V) (H)<br>
F940GOT-LWD<br>
F940GOT-SWD<br>
F930GOT-BWD<br>
F920GOT-BBD5-K<br>
PLC System: MELSEC-QnA, Q (QnA CPU, QnA computer link)<br>
MELSEC-A (A computer link)<br><br>
Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
<tr><td>F920GOT-BBD5-K</td><td>F920GOT-K (blue)</td></tr>
</table>
d) Set CPU direct connection (RS-422/RS-232C)/link connection (RS-422/RS-232C) of the GOT-F900.<br>
On the menu, select "View/Project"-"System Settings"-"Setup Data".<br>


</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
</table>

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td></td><td>e) Set the following.<br>Port: RS-422<br>RS-232C<br>Type: CPU<br>LINK<br>DST Station No. (Station No.) : 0 to 15<br>GOT Station No. (–) : –<br><br>Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Connection destination</th><th>Port</th><th>Type</th><th>Station number</th></tr>
<tr><td>QnA CPU direct connection</td><td rowspan="3">RS-422</td><td>CPU</td><td>0</td></tr>
<tr><td>A computer link unit</td><td>LINK</td><td>0 to 15</td></tr>
<tr><td>QnA computer link unit</td><td>CPU</td><td>0</td></tr>
<tr><td>A computer link unit</td><td rowspan="2">RS-232C</td><td>LINK</td><td>0 to 15</td></tr>
<tr><td>QnA computer link unit</td><td>CPU</td><td>0</td></tr>
</table></td><td></td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open the DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.</td><td><br><br>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

- The "PLC" selection item display varies depending on the software version as follows.

| DU/WIN | "PLC System" selection item display in DU/WIN | | |
|---|---|---|---|
| | MELSEC-A | MELSEC-A,QnA | MELSEC-A *1<br>MELSEC-QnA, Q |
| Version | 2.00 or later | 2.30 or later | 2.40 or later |
| Connection setting availability | Not available<br>(A computer link connection is available.) | Available | Available<br>(Select "MELSEC-QnA,Q".) |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

## 10.6 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the QnA Series PLC.

**1) Cable for the GOT and the QnA Series PLC**

F920GOT-K

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>QnA CPU direct connection<br>Prepared by the user<br>(Cable length 3m (9'10") or less)<br>Resistance per wire: 0.67 Ω or less<br>(Approximately AWG 28 or thicker) | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)◄►(2)<br>(2)◄►(3)<br>(3)◄►(4)<br>(4)◄►(20)<br>(5)◄►(7)<br>(6)◄►(15)<br>(7)◄►(16)<br>(8)◄►(17)<br>(9)◄►(12)<br>(8)►<br>►(21) | QnA Series<br>1 13<br>14 25<br>25-pin D-Sub, male |

F930GOT/F930GOT-K/F940GOT/F940WGOT

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>QnACPU direct connection<br>FX-40DU-CAB<br>FX-40DU-CAB-10M<br>FX-40DU-CAB-20M<br>FX-40DU-CAB-30M<br>FX-50DU-CABL | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(3)<br>(3)–(4)<br>(4)–(5)<br>(5)–(7)<br>(6)–(15)<br>(7)–(16)<br>(8)–(17)<br>(9)–(18)<br>(8)–(21) | QnA Series<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | RS-422 connection<br>A computer link | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | FG(class D grounding)–FG(class D grounding)<br>(1)–RXD+(RDA)<br>(6)–RXD-(RDB)<br>(2)–TXD+(SDA)<br>(7)–TXD-(SDB)<br>(5)–SG(GND)<br>Signal name of computer link | Terminal block<br>Computer link unit side (PLC side) |
| c) | RS-232C connection<br>A computer link<br>F2-232CAB-1<br>(The connection diagram is partially different) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (1)–(1)FG<br>(2)–(2)SD(TXD)<br>(3)–(3)RD(RXD)<br>(7)–(4)RS(RTS)<br>(8)–(5)CS(CTS)<br>(6)–(6)DR(DSR)<br>(5)–(7)SG(GND)<br>(8)CD(DCD)<br>(4)–(20)ER(DTR)<br>Signal name of computer link | Computer link unit side (PLC side)<br>1 13<br>14 25<br>25-pin D-Sub, male |
| d) | RS-232C connection<br>A, QnA computer link<br>Prepared by user<br><br>If proper monitoring is not executed due to external noise when connecting A1SJ71QC24 (-R2), connect all signals in pair with SG (except SG and FG).<br>RD–SD<br>SD–RD<br>DTR–DSR<br>DSR–DTR<br>SG–SG | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(1)–(1)CD(DCD)<br>(2)–(2)RD(RXD)<br>(3)–(3)SD(TXD)<br>(4)–(4)DR(DTR)<br>(5)–(5)SG(GND)<br>(6)–(6)DR(DSR)<br>(7)–(7)RS(RTS)<br>(8)–(8)CS(CTS)<br>Signal name of computer link | Computer link unit side (PLC side)<br>1 5<br>6 9<br>9-pin D-Sub, male |

When the computer link unit for the QnA Series is equipped with the 25-pin D-Sub port, the connection diagram is as follows. (The AJ71QC24-R4 is available).

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | RS-422 connection<br>QnA computer link<br>Prepared by the user | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | FG(class D grounding)–FG(class D grounding)<br>(1)–(2)<br>(6)–(15)<br>(2)–(3)<br>(7)–(16)<br>(5)–(8)<br>(21) | Computer link unit side (PLC side)<br>1 13<br>14 25<br>25-pin D-Sub, male |

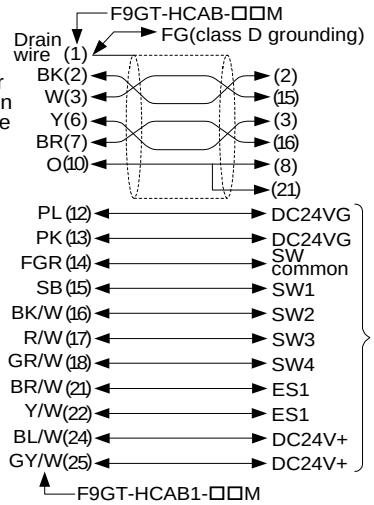
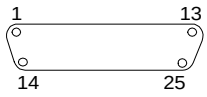
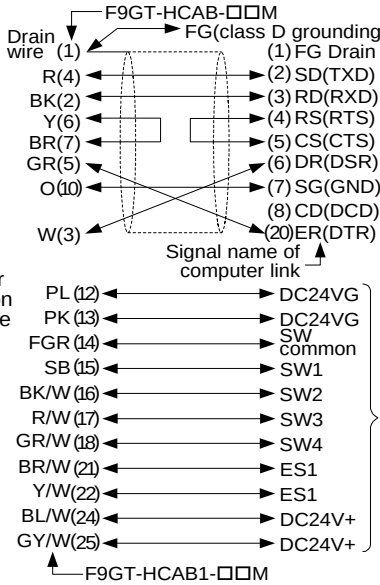
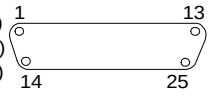
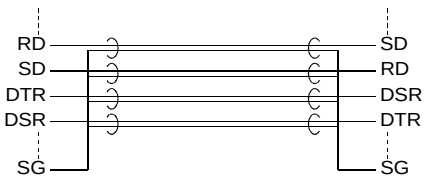
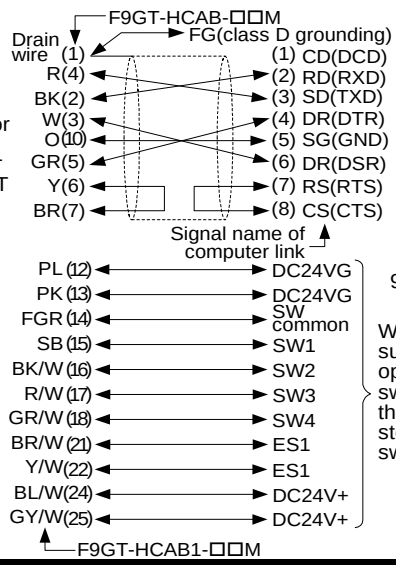
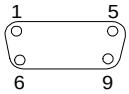
## 2) Cable for the Handy GOT and the QnA Series PLC

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | F9GT-HCAB3-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-☐☐M<br>FG(class D grounding)<br>Drain wire (1)<br>(2) ◄► (2)<br>(3) ◄► (15)<br>(4) ◄► (4)<br>(5) ◄► (17)<br>(6) ◄► (3)<br>(7) ◄► (16)<br>(8) ◄► (5)<br>(9) ◄► (18)<br>(10) ◄► (7)<br>(8)<br>(21)<br>PL (12) ◄► DC24VG<br>PK (13) ◄► DC24VG<br>FGR (14) ◄► SW common<br>SB (15) ◄► SW1<br>BK/W (16) ◄► SW2<br>R/W (17) ◄► SW3<br>GR/W (18) ◄► SW4<br>BR/W (21) ◄► ES1<br>Y/W (22) ◄► ES1<br>BL/W (24) ◄► DC24V+<br>GY/W (25) ◄► DC24V+<br>F9GT-HCAB1-☐☐M | QnA Series<br>1 13<br>14 25<br>25-pin D-sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | A computer link<br>Prepared by the user | RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-☐☐M<br>FG(class D grounding)<br>Drain wire (1)<br>BK (2) ◄► RXD+(RDA)<br>W (3) ◄► RXD-(RDB)<br>Y (6) ◄► TXD+(SDA)<br>BR (7) ◄► TXD-(SDB)<br>O (10) ◄► SG(GND)<br>Signal name of computer link<br>PL (12) ◄► DC24VG<br>PK (13) ◄► DC24VG<br>FGR (14) ◄► SW common<br>SB (15) ◄► SW1<br>BK/W (16) ◄► SW2<br>R/W (17) ◄► SW3<br>GR/W (18) ◄► SW4<br>BR/W (21) ◄► ES1<br>Y/W (22) ◄► ES1<br>BL/W (24) ◄► DC24V+<br>GY/W (25) ◄► DC24V+<br>F9GT-HCAB1-☐☐M | Terminal block<br>Computer link unit side (PLC side)<br>Wire the power supply, the operation switches and the emergency stop switch. |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | RS-422 connection<br>QnA computer link<br>Prepared by the user | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Computer link unit side (PLC side)<br>  <br>25-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| f) | RS-232C connection<br>A computer link<br>Prepared by the user | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Computer link unit side (PLC side)<br>  <br>25-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| g) | RS-232C connection<br>A, QnA computer link<br>Prepared by user<br>If proper monitoring is not executed due to external noise when connecting A1SJ71QC24 (-R2), connect all signals in pair with SG (except SG and FG).<br>  | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Computer link unit side (PLC side)<br>  <br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 10.7 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the QnA Series PLC.
The slightly different messages may be displayed on the F920GOT-K.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen by a touch key *1.<br><br>*1 No touch key is available on the F920GOT-K. | The power of the QnA Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the QnA Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the QnA Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the QnA Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the QnA Series PLC was referenced.<br>(Example: While an QnA Series PLC is connected, a device exists only in the Q Series PLC is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected QnA Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | When a PLC is not connected, the GOT defaults to the QnA mode.<br><br>• Cause<br>Check for the A or QnA Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the changeover destination screen (excluding the head screen) is beyond the range for the A Series.<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | A device that does not exist in the QnA Series PLC was referenced. (Example: While the QnA Series PLC was connected, a device provided only in the Q Series PLC was specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected QnA Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | | |
| | While the QnA Series PLC is not connected, the connection mode for the FX2 Series PLC is selected.<br><br>• Cause<br>Check for the A or QnA Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the head screen is beyond the range for the A Series.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later | From first product |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 | – |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later | From first product |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Software such as GX Developer and FX/WIN | In the personal computer connected to the GOT-F900, sequence programs cannot be monitored or transferred. Communication with the sequence software is disabled. An error message is displayed (only in QnA CPU direct connection). | QnA PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>For monitoring or transferring sequence programs, set a bar code reader to invalid and a printer to "DON'T USE".<br>If the PLC is connected, select the GOT-F900 equipped with two built-in RS-232C channels. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. |
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | QnA computer link, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 11. Connection of MELSEC-Q Series PLC

This chapter explains connection of the GOT-F900 Series display unit to the Q Series PLC (Q mode). When connecting the Q Series PLC in the A mode or in the computer link for A, refer to chapter 9.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the Q Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 11.1 |
| System Configuration | You can select the configuration between the GOT and the Q Series PLC/computer link unit as well as proper cables. | 11.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| QCPU Selection in Direct Connection | In the Q computer link unit, the following setting is required. When Q connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the Q Series PLC. | – |
| Setting in Q Serial Communication Unit | You can learn the communication specifications and the setting. | 11.3 |
| | Communication Setting Specifications: The contents of setting of computer link | 11.3.1 |
| | Setting by GPPW: How to set the switches in the computer link unit using the software GX Developer | 11.3.2 |
| | Used Connectors and Connector Covers: The model names and the manufacturer of the connectors used in the GOT-F900 and the serial communication unit | 11.3.3 |
| Setting in Q Multi PLC System | You can learn the connection of GOT-F900, setting in screen creation software, and PLC number. | 11.4 |
| Caution on Use of MELSEC-Q Series PLC | You can learn the restrictions in connecting the GOT to the Q Series PLC. | 11.5 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 11.6 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for Q Series PLC/GOT connection | 11.7 |
| Troubleshooting | Description of errors and how to fix them | 11.8 |

## 11.1 System Condition

When connecting the Q Series PLC, check the COM port designation, the OS version of the GOT-F900, and the applicable version of the screen creation software.

Compatibility when connecting Q Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | ✓ | ✓ | – | 1.00 | SW4-26C | 2.70 |
| F930GOT | ✓ | ✓ | ✓ | ✓ | 2.20 | SW4-F | 2.40 |
| F930GOT-K | ✓ | ✓ | ✓ | ✓ | 4.60 | SW4-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | ✓ | 4.10 | SW4-F | 2.40 |
| F940WGOT | ✓ | ✓ | ✓ | ✓ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | –*1 | 4.10 | SW4-F | 2.40 |
| F943 Handy GOT | – | ✓ | ✓ | –*1 | 4.10 | | |

The following versions or later are compatible with Q00JCPU/Q00CPU/Q01CPU and Q multi PLC system.

| Compatible with | F920GOT -K | F930GOT | F930GOT -K | F940GOT | F940W GOT | F94* handy GOT | Version of screen creation software | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | GT Designer | DU/WIN |
| Q00JCPU, Q00CPU, Q01CPU | 1.00 | 4.30 | 4.60 | 6.30 | 1.30 | 6.30 | Same as above | |
| Q multiple PLC system | | | | | | | SW5-P (V. 5.13P) | – |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

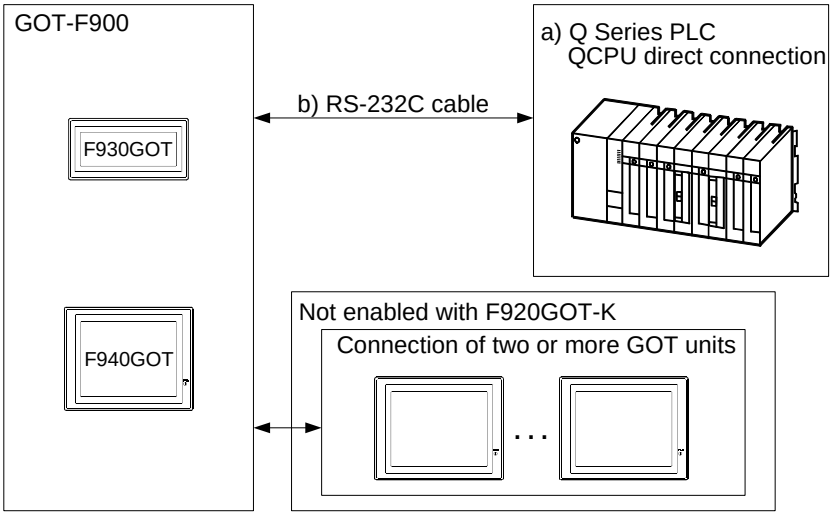
## 11.2 System Configuration

The Q Series PLC can be connected to the GOT through a serial communication unit connection (RS-422 or RS-232C) or directly via RS-232C. This section explains the cables and options required in such a system.

### 11.2.1 Configuration for Direct Connection (RS-232C)

Connect the GOT-F900 to the programming port of the Q Series PLC.

**1) F920GOT-K/F930GOT/F930GOT-K/F940GOT/F940WGOT**



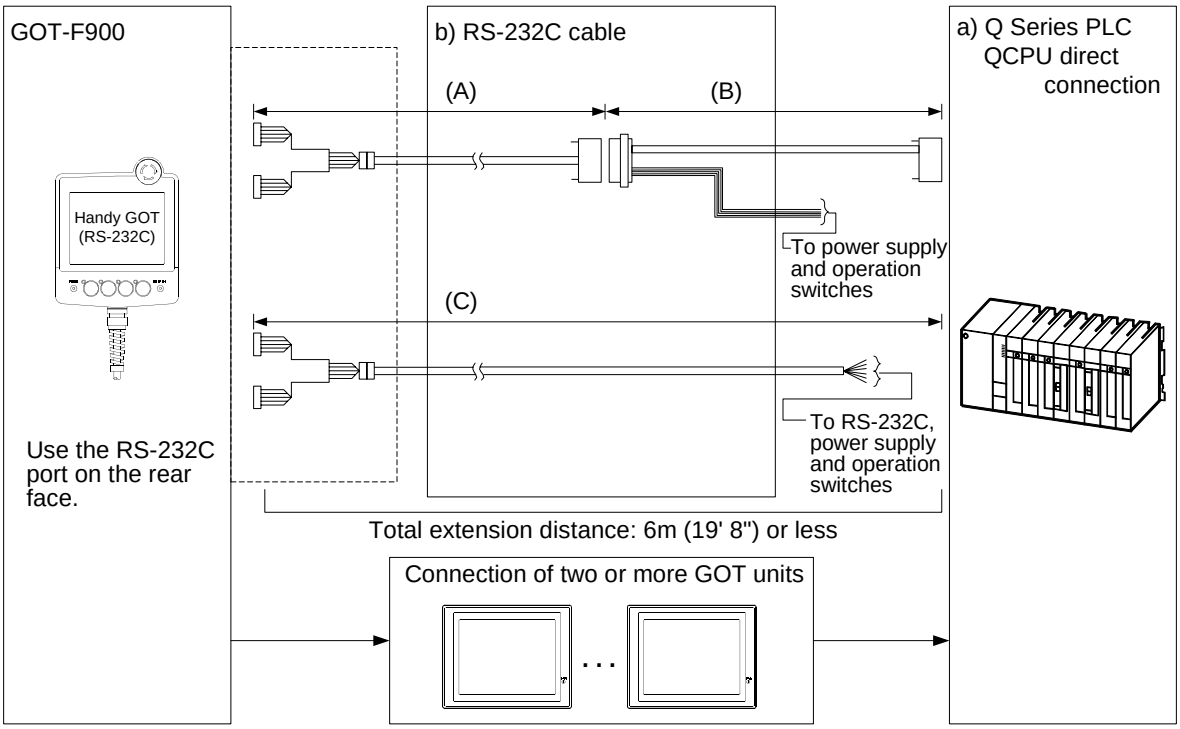

F920GOT-K

| a) Q Series PLC | b) RS-232C cable | Remarks |
|---|---|---|
| QCPU direct connection (6-pin MINI DIN) | Prepared by the user. | Make sure the total cable extension distance is 3m (9' 10") or less. |

F930GOT/F930GOT-K/F940GOT/F940WGOT

| a) Q Series PLC | b) RS-232C cable | Remarks |
|---|---|---|
| QCPU direct connection (6-pin MINI DIN) | QC30R2 | |

### 2) F943 Handy GOT



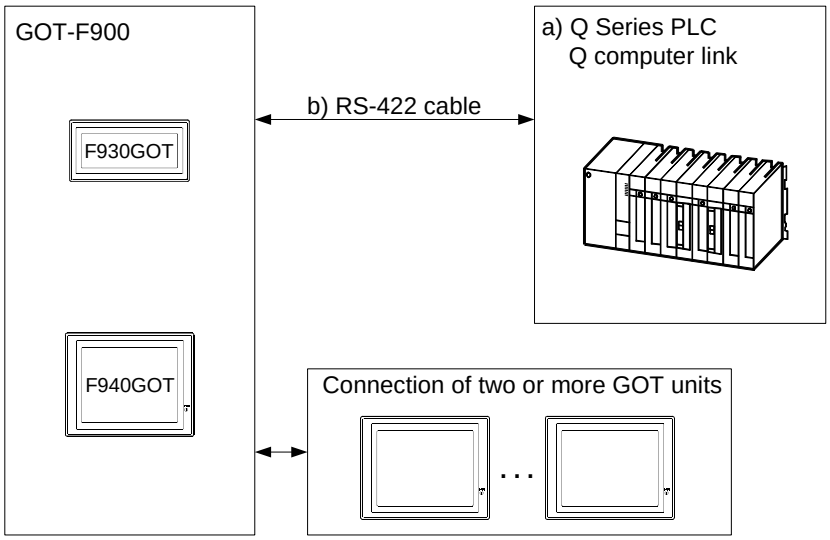

| a) Q Series PLC | b) RS-232C cable | Remarks |
|---|---|---|
| QCPU (6-pin MINI DIN) | (A) F9GT-HCAB-□□M<br>(B) F9GT-HCAB5-150<br>(C) F9GT-HCAB1-□□M | |

- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

### 11.2.2 Configuration for Q Computer Link Connection (RS-422)

The GOT-F900 and the serial communication unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of serial communication units connected to the Q Series PLC can be connected.

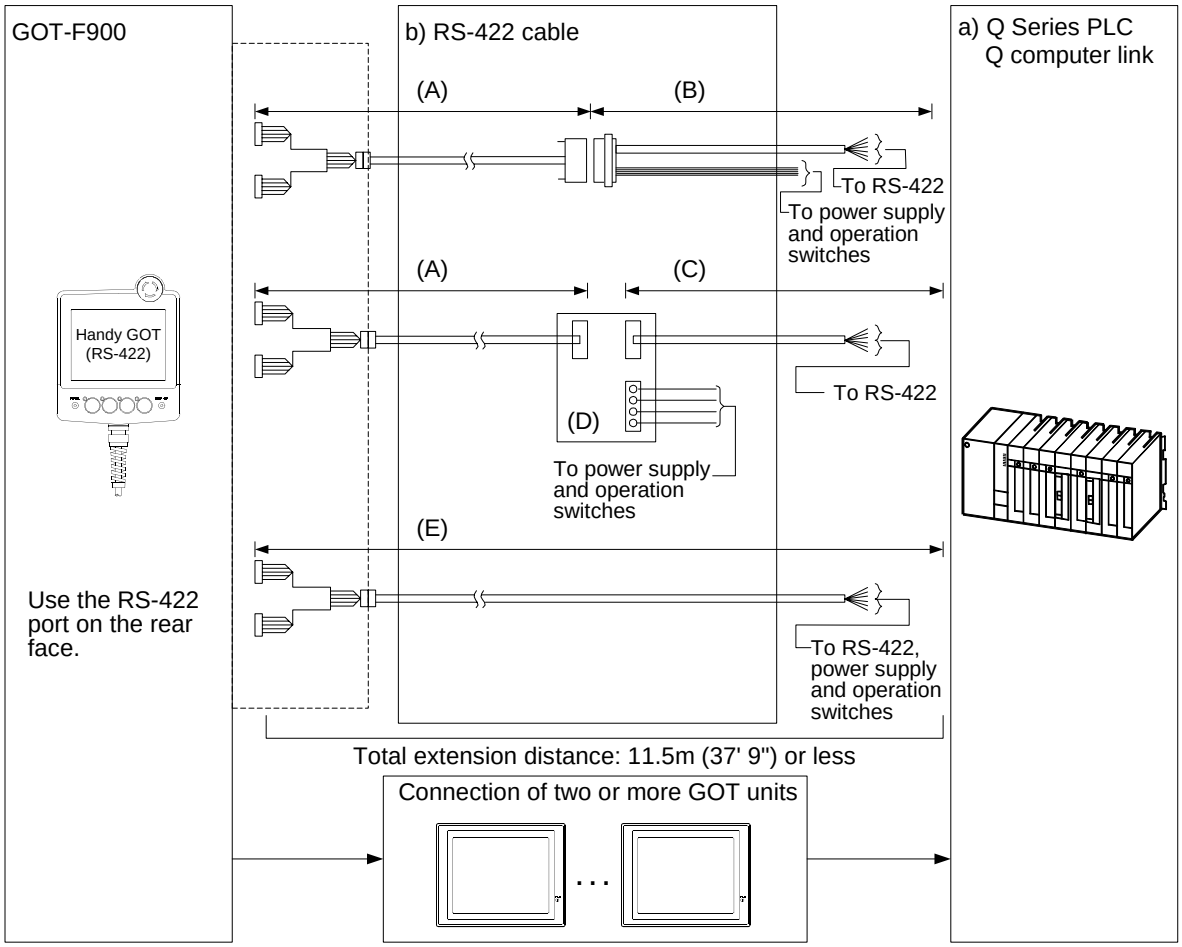
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) Q Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| QJ71C24 | Two-piece terminal block (CH2) | Prepared by the user. | Make sure the total cable extension distance is 30m (98' 5") or less. |

- Applicable Q Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



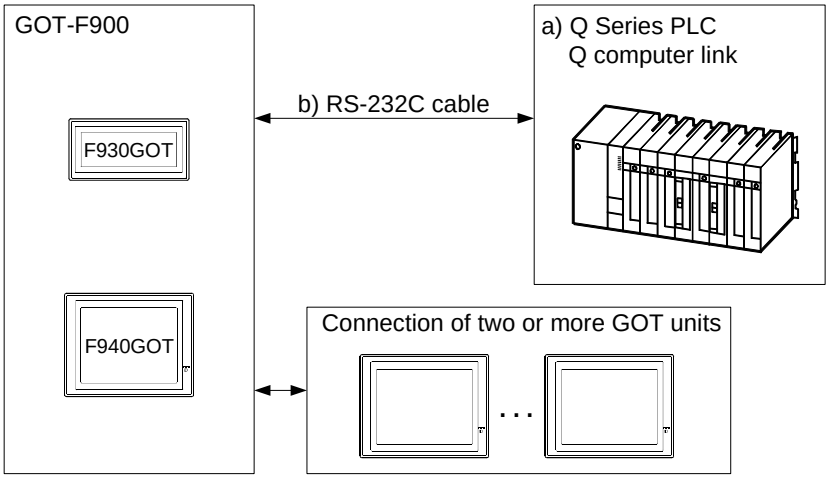

| a) Q Series PLC | | b) RS-422 cable | Remarks |
|---|---|---|---|
| QJ71C24 | Two-piece terminal block (CH2) | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user.<br>(C) Prepared by the user.<br>(D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | |

- Applicable Q Series PLC products in the column a) are computer link units equipped with built-in RS-422 interface.
- Make sure that the total cable extension distance "(A) + (B)" or (E) is 11.5m (37' 9") or less.

### 11.2.3 Configuration for Q Computer Link Connection (RS-232C)

The GOT-F900 and the serial communication unit can be connected on the "1:1" basis.
As many GOT-F900 units as the number of serial communication units connected to the Q Series PLC can be connected.

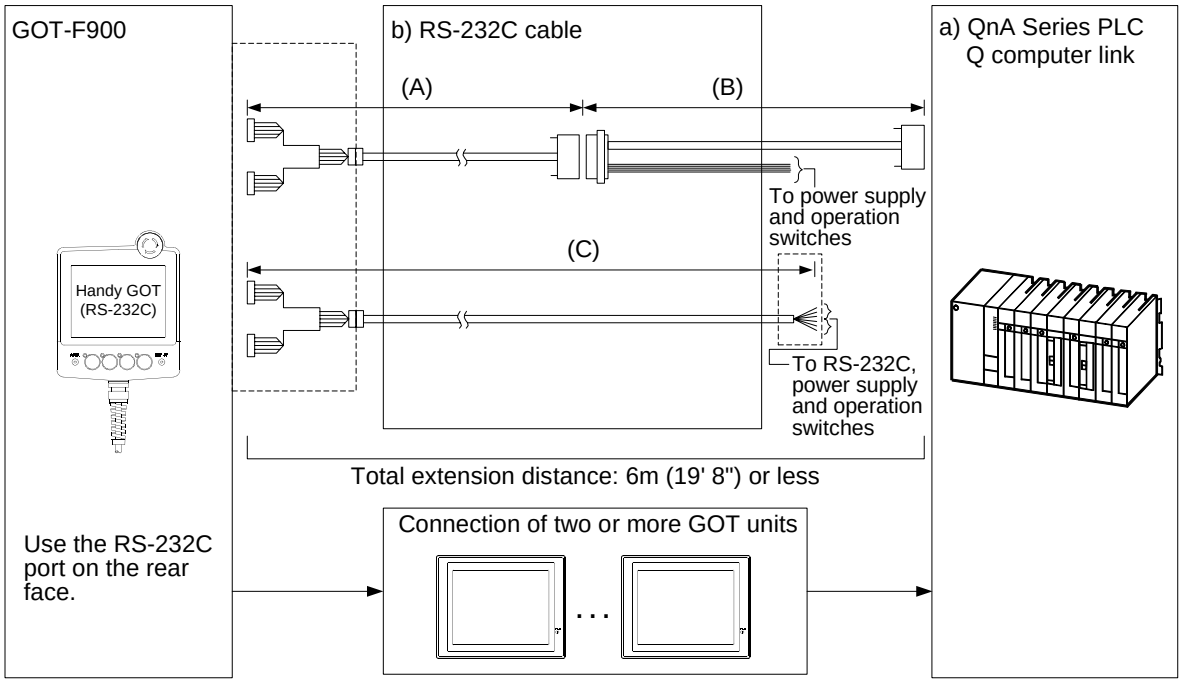
**1) In the case of F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) Q Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| AJ71QC24 | 9-pin D-Sub (CH1) | Prepared by the user. | Make sure the total cable extension distance is 15m (49' 3") or less. |
| AJ71QC24-R2 | 9-pin D-Sub (CH1 or CH2) | Prepared by the user. | Make sure the total cable extension distance is 15m (49' 3") or less. |

- Applicable Q Series PLC products in the column a) are computer link units equipped with built-in RS-232C interface.

### 2) F943 Handy GOT




| a) Q Series PLC | | b) RS-232C cable | Remarks |
|---|---|---|---|
| QJ71C24 | 9-pin D-Sub (CH1) | (A) F9GT-HCAB-3M<br>(B) Prepared by the user. | |
| QJ71C24-R2 | 9-pin D-Sub (CH1 or CH2) | (C) F9GT-HCAB1-3M | |

- In the (C)F9GT-HCAB1-3M shown in the column "b) RS-232C cable", the end on the PLC side is loose wires.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6 m or less.

## 11.3 Setting in Q Serial Communication Unit

In Q computer link connection, the switches in the serial communication unit should be set as described below. When setting the switches for communication with the GOT-F900, use the GX Developer.

### 11.3.1 Communication Setting Specifications

This section explains the communication specifications.

**1) Setting the communication protocol**

Set the communication protocol so that the COM port of the serial communication unit connected to the GOT-F900 is set to the dedicated (MC) protocol format 5.

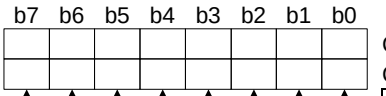
| Serial communication unit | COM port | Switch | Set value | Remarks |
|---|---|---|---|---|
| QJ71C24 | CH1(RS-232C) | Switch 2 | 5H | For communication using binary codes of QnA compatible 4C frame |
| | CH2(RS-422) | Switch 4 | | |
| QJ71C24-R2 | CH1(RS-232C) | Switch 2 | | |
| | CH2(RS-422) | Switch 4 | | |

**2) Setting the transmission specifications setting switches**

Set the transmission specifications setting switches of the serial communication unit to realize the transmission specifications shown in the table below.
For the switch setting method, refer to the manual of the serial communication unit.

| Item | | Specifications | Set value | Switch | |
|---|---|---|---|---|---|
| | | | | CH1 | CH2 |
| Transmission speed | | 38400 bps | 09H | (CH1 side: Switch 1 (upper)) | (CH2 side: Switch 3 (upper)) |
| Data format | Data bit | 8 bits | 66H | (CH1 side: Switch 1 (lower)) | (CH2 side: Switch 3 (lower)) |
| | Parity bit | Provided (odd) | | | |
| | Stop bit | 1 bit | | | |
| | Sum check | Provided | | | |
| Write in RUN mode | | Possible | | | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.




CH1 side: Switch 1 (lower)
CH2 side: Switch 3 (lower)

| Bit | Description | OFF (0) | OFF (1) | Remarks |
|---|---|---|---|---|
| b0 | Operation setting | Independent | Interlocking | Make sure to set the CH1 side to OFF. |
| b1 | Data bit | 7 | 8 | The parity bit is excluded. |
| b2 | Parity bit | Not provided | Provided | Vertical parity |
| b3 | Odd/even parity | Odd | Even | Valid only when the parity bit is set to "odd" or "even". |
| b4 | Stop bit | 1 | 2 | – |
| b5 | Sum check code | Odd | Provided | – |
| b6 | Write in RUN mode | Forbidden | Permitted | – |
| b7 | Setting change | Forbidden | Permitted | – |

**3) Setting the station number setting switch**

Set to 00H in both the GOT-F900 and the serial communication unit (switch 5).

### 11.3.2 Setting by GPPW

Set the switches in the QJ71C24(-R2) using "I/O assignment" of the GX Developer.
For details of the setting, refer to the GX Developer OPERATING MANUAL.

**1) I/O assignment**

Set the type of the unit attached on the base unit and the switches in the QJ71C24(-R2).

**[Open procedure]**

"GX Developer" → "PLC Parameter" → "I/O assignment"

**[Display contents]**

a) Type
Set "Intelli".

b) Model name
Set the model name of the attached unit (QJ71C24 or QJ71C24-R2).

c) Points
Set "32".

d) Start XY
Set the head I/O signal number (hexadecimal) of the target unit.

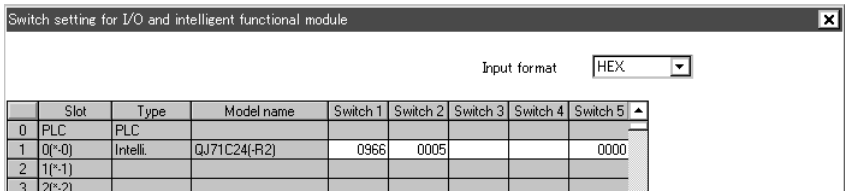
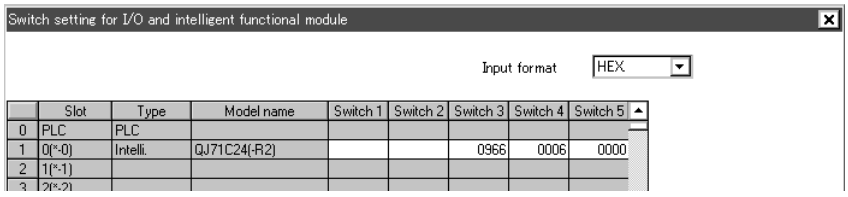
**2) Switch setting for the I/O unit/intelligent function unit**

Set the transmission specifications, the communication protocol, etc. between the GOT and connected equipment.

**[Open procedure]**

"GX Developer" → "PLC Parameter" → "I/O assignment" → "Switch setting"

The contents of setting vary depending on the CH (interface number) of the serial communication unit connected to the GOT.
Set the following in accordance with the connected CH.

| CH connected to GOT | Contents of setting |
|---|---|
| CH1 |  |
| CH2 |  |

### 11.3.3 Used Connectors and Connector Covers

**1) Connector on the GOT side**

- For the shape of the connector of the GOT (excluding the Handy GOT), refer to chapter 4
- For the shape of the connector of the cable dedicated to the Handy GOT, refer to chapter 5.

**2) Connector on the serial communication unit side**

The serial communication unit is equipped with the connector having the following model name. Use a suitable counterpart connector.

Manufacturer: DDK Ltd.Japan
17L-10090-27-D9AC

## 11.4 Setting in Q Multi PLC System (Function version -B or later)

QCPU of function version -B or later (except Q00JCPU, Q00CPU, or Q01CPU) is compatible with the multiple PLC system with 4 GOT units maximum.
If the OS version of the GOT-F900 and the screen creation software is compatible with Q multiple PLC system, the screen creation software can specify the monitoring of other GOT through the connected GOT and the CPU.

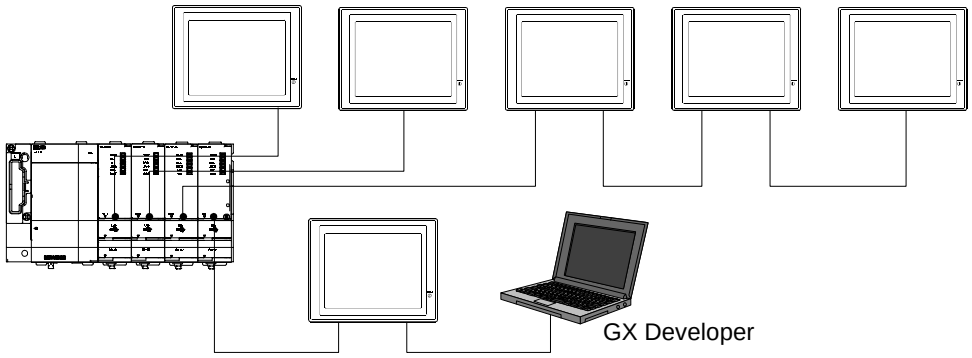
### 11.4.1 Direct connection to QCPU

The required setting and PLC numbers for connecting the GOT-F900 to the programming port of QCPU (RS-232C) are shown below.

**1) GOT-F900 connection**

Each QCPU can be connected to the GOT-F900.
Connection of two or more GOT units can be performed and 2-port interface function (Program transfer and monitor using GX Developer) is available.

Multiple PLC system




**2) Setting in the screen creation software**

a) GT Designer

Select MELSEC-Q (Multi) in the "GOT/PLC Type" dialog box.
Specify RS-422 or RS-232C for Port, CPU for Type, and 0 for Station No. in the "Project Auxiliary Setting" dialog box.

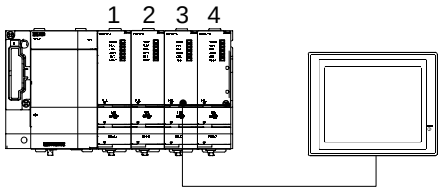
b) DU/WIN

The setting is not available.

**3) PLC numbers when appointing device**

PLC numbers from 1 to 4 are allocated (smaller number for the unit closer to the power card).
Specify the target PLC number and device number when creating screen data.
When using QCPU with GOT-F900 connected, number 0 (own station) can also be specified.

PLC number of CPU




Example:

Specify 1 to monitor the unit with PLC number 1.
Specify 0 or 3 to monitor the unit with PLC number 3.

### 11.4.2 Connection to serial communication

The required setting and PLC numbers for connecting the GOT-F900 to the serial communication unit attached to the Q multiple PLC system are shown below. Note that there are restrictions on use of the serial communication unit not compatible with the multiple PLC system. See below for its setting.

**1) GOT-F900 connection**

GOT-F900 can be connected to RS-232C or RS-422 port on the serial communication unit.
Connection of two or more GOT units can be performed and 2-port interface function (Program transfer and monitor using GX Developer) is available.

**2) Serial communication unit compatible with the Q multiple PLC system (Version B or later)**

a) Setting in the screen creation software

**GT Designer**

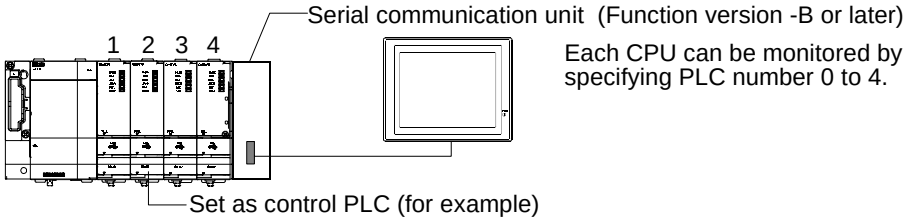
Select MELSEC-Q (Multi) in the "GOT/PLC Type" dialog box.
Specify RS-422 or RS-232C for Port, CPU for Type, and 0 for Station No. in the "Project Auxiliary Setting" dialog box.

**DU/WIN**

The setting is not available.

b) PLC numbers when appointing device

If PLC number 0 is specified, monitoring of control PLC (number 2 in the example below) can be executed.
If one of the PLC numbers 1 through 4 is specified, the unit with the corresponding PLC number can be monitored.


Serial communication unit (Function version -B or later)
1 2 3 4
Each CPU can be monitored by specifying PLC number 0 to 4.
Set as control PLC (for example)

**3) Serial communication unit not compatible with the Q multiple PLC system (Earlier than Version B)**

Version B or later is required for connecting the GOT-F900 to the serial communication unit attached to the Q multiple PLC system (Version B).

**4) Control PLC**

Control PLC is the unit with the number specified under "PLC Parameter" - "I/O assignment" in the GX Developer.
(No setting is available in the version of GX Developer not compatible with multiple PLC system.)

## 11.5 Caution on Use of MELSEC-Q Series PLC

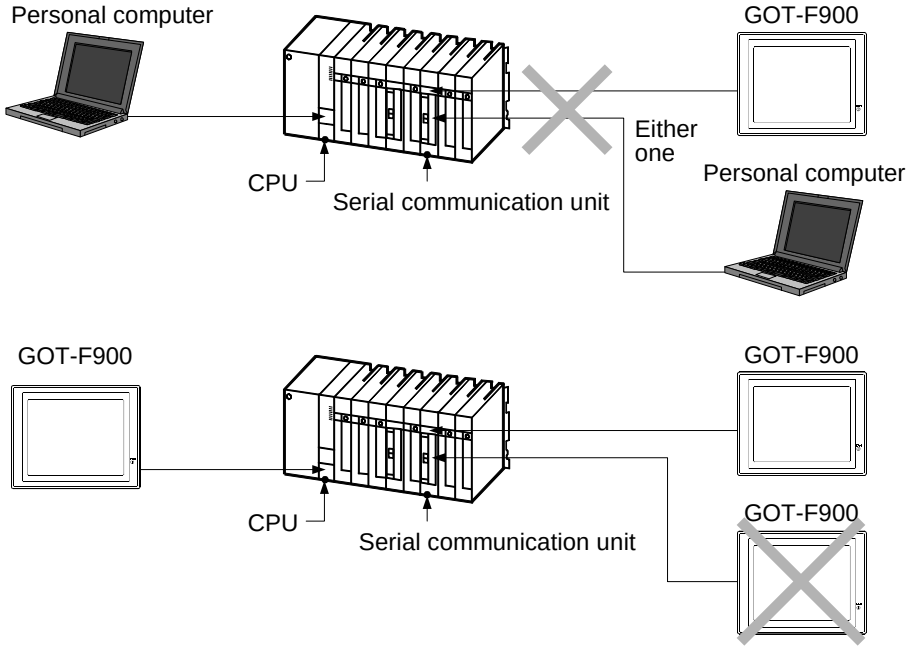
When using the GOT-F900 connected to the Q Series PLC, observe the following caution on use.

### 11.5.1 Restriction in device specification

Word specification of bit devices and bit specification of word devices are not supported in the GOT-F900.

### 11.5.2 Caution when the GOT is connected to the serial communication unit

When the GOT is connected, the CH1 and the CH2 of the serial communication unit cannot be used at the same time.
Accordingly, have in mind that connecting both GOT unit and peripheral equipment for the GPP function or two GOT units to one serial communication unit is not allowed.




However, a GOT unit (RS-232C) or a personal computer (USB port) can be connected to the QCPU while the computer link unit has one GOT unit.

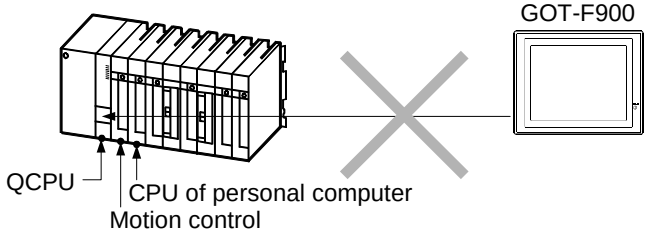
### 11.5.3 Caution when connecting to Q multiple CPU system

**1) Restriction in Device Monitor Function of GOT-F900**

The PLC number cannot be specified on the screens for device monitor or sampling in HPP mode on the system screen. Hence, GOT-F900 monitors only the connected CPU.
When a GOT is connected to the serial communication unit, the GOT monitors only the control PLC.

**2) Restriction in Monitored CPU**

The GOT-F900 should be connected only when the system is configured with QCPU. If the system includes a motion control or CPU of personal computer, GOT-F900 should not be connected because monitoring cannot be performed properly even if it is connected to the QCPU.



### 11.5.4 Caution when setting screen creation software

QCPU of function version -B or later (except Q00JCPU, Q00CPU, or Q01CPU) is compatible with the multiple PLC system with 4 GOT units maximum.

When two or more QCPU are attached to the main unit, the configuration is called a multiple PLC system, and monitoring of other CPU (number specified) from the CPU connected with the GOT-F900 is enabled.
According to the PLC type specified in the screen creation software, the CPU which can be monitored is determined as follows

#### In one unit CPU configuration

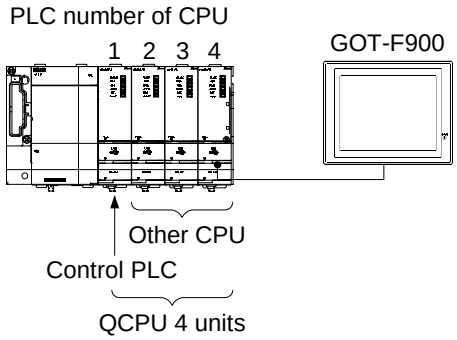
In the screen creation software, select MELSEC-QnA, A for PLC type.

| PLC type in screen creation software and GOT | CPU connected with GOT-F900 | Other CPU | Serial communication unit |
|---|---|---|---|
| MELSEC-QnA, Q | ✓ | – | Only control PLC monitored |
| MELSEC-Q (Multi) | – | – | – |

#### In multiple PLC system

In the screen creation software, select MELSEC-Q (Multi) for PLC type.

| PLC type in screen creation software and GOT | CPU connected with GOT-F900 | Other CPU | Serial communication unit |
|---|---|---|---|
| MELSEC-QnA, Q | ✓ | – | Only control PLC monitored |
| MELSEC-Q (Multi) | ✓ | ✓ | ✓ |



## 11.6 Setting of Connected Equipment for GOT

The Q Series PLC connection parameters can be set using the GOT-F900 Series and the screen creation software GT Designer and DU/WIN.

**Setting the Connection Type**

Set the connection type in accordance with the connected equipment as shown in the table below.
Have in mind that computer link for Q (serial communication unit) and Q multiple PLC system requires CPU direct connection.

| Connected equipment [classification in manual] | GOT-F900 | DU/WIN | Remarks |
|---|---|---|---|
| | CONNECTION | Type | |
| [QCPU direct connection]<br>RS-232C port of QCPU card | CPU direct connection (RS-232C) | | Programming port |
| [Q computer link]<br>QJ71C24 (RS-422/RS-232C)<br>QJ71C24-R2 (RS-232C) | CPU direct connection (RS-422) or<br>CPU direct connection (RS-232C) | | Communicates as programming port |

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:When monitoring only the connected CPU<br>QnA, Q SERIES<br>When monitoring other CPU via Q multiple PLC system<br>Q (MULTI) SERIES<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

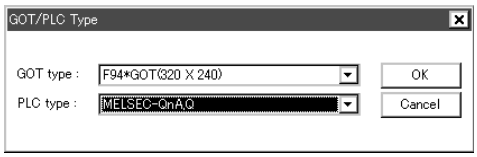
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE:When monitoring only the connected CPU<br>QnA, Q SERIES<br>When monitoring other CPU via Q multiple PLC system<br>Q (MULTI) SERIES<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

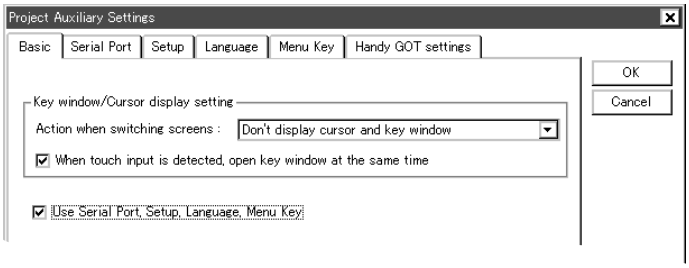
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.
- The "PLC type" selection item display varies depending on the OS version as follows.

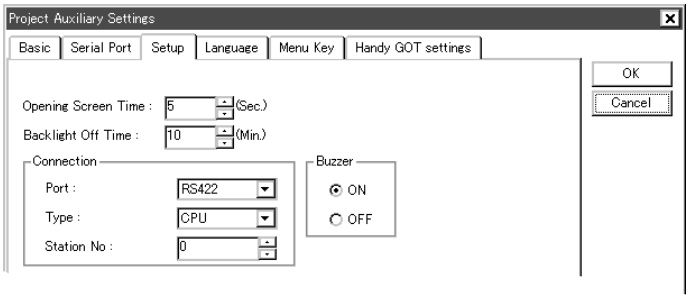
| GOT-F900 | | "PLC TYPE" selection item display in GOT | | | |
|---|---|---|---|---|---|
| | | A SERIES | A, QnA SERIES | A SERIES *1 QnA, Q SERIES | Q (Multi) SERIES |
| OS version | F940WGOT | – | – | 1.00 or later | 1.30 or later |
| | F940GOT, Handy GOT | 1.00 or later | 3.00 or later | 4.10 or later | 6.30 or later |
| | F930GOT-K | – | – | 4.60 or later | 4.60 or later |
| | F930GOT | 1.00 or later | 2.00 or later | 2.20 or later | 4.30 or later |
| | F920GOT-K | – | – | 1.00 or later | 1.00 or later |
| Connection setting availability | | Not available | Not available | Available (Select "QnA, Q SERIES".) | Available |

*1 Note that the selection item display is changed from "A, QnA SERIES" to "A SERIES" and "QnA, Q SERIES".

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open GT Designer.<br><br>b) Click the [New] button.<br> 

<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>F920GOT (128 × 64)<br>PLC type: MELSEC-QnA, Q<br>MELSEC-Q (Multi)<br><br>Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
<tr><td>F920GOT(128×64)</td><td>F920GOT-K</td></tr>
</table>
Click [OK].<br><br>d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

<br>Click the "Setup" tab.<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| | In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 0<br>GOT Station No. (–) : –<br>Combinations of "Port" and "Type" are as follows. | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

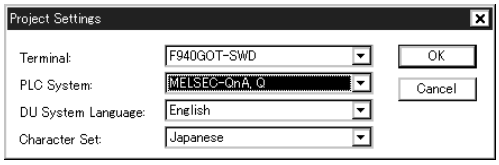
| Connection destination | Port | Type |
|---|---|---|
| Direct connection to Q CPU | RS-232C | CPU |
| Computer link unit for Q | | |
| Computer link unit for Q | RS-422 | |

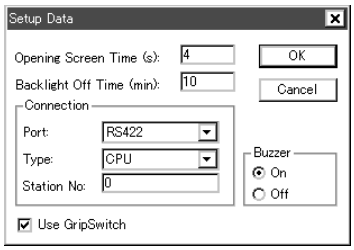
- The "PLC type" selection item display varies depending on the software version as follows.

| GT Designer | "PLC type" selection item display in GT Designer | | | |
|---|---|---|---|---|
| | MELSEC-A | MELSEC-A, QnA | MELSEC-A *1<br>MELSEC-QnA, Q | MELSEC-A<br>MELSEC-QnA, Q<br>MELSEC-Q (Multi) |
| Version | SW1-A or later | SW2-A or later | SW4-F or later | SW5-P or later |
| Connection setting availability | Not available | Not available | Available<br>(Select "MELSEC-QnA,Q".) | Available |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open DU/WIN.<br><br>
b) On the menu, select "File"-"New".<br>


<br>
c) Set the following.<br>
Terminal: F940WGOT-TWD (V)(H)<br>
F940GOT-LWD<br>
F940GOT-SWD<br>
F930GOT-BWD<br>
F920GOT-BBD5-K<br>
PLC System: MELSEC-QnA, Q<br><br>
Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
<tr><td>F920GOT-BBD5-K</td><td>F920GOT-K (blue)</td></tr>
</table>
</td><td>The "Project settings" dialog box appears.</td></tr>
<tr><td></td><td>
d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900. On the menu, select "View/Project"-"System Settings"-"Setup Data".<br>


<br>
e) Set the following.<br>
Port: RS-422<br>
RS-232C<br>
Type: CPU<br>
DST Station No. (Station No.): 0<br>
GOT Station No. (–) : –<br><br>
Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Connection destination</th><th>Port</th><th>Type</th></tr>
<tr><td>Direct connection to Q CPU</td><td rowspan="2">RS-422</td><td rowspan="3">CPU</td></tr>
<tr><td>Computer link unit for Q</td></tr>
<tr><td>Computer link unit for Q</td><td>RS-232C</td></tr>
</table>
</td><td>The "Setup Data" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above. | The "Open" dialog box appears.<br>The "Project settings" dialog box appears. |

- The "PLC" selection item display varies depending on the software version as follows.

| DU/WIN | "PLC System" selection item display in DU/WIN | | |
|---|---|---|---|
| | MELSEC-A | MELSEC-A, QnA | MELSEC-A *1<br>MELSEC-QnA, Q |
| Version | 2.00 or later | 2.30 or later | 2.40 or later |
| Connection setting availability | Not available | Available | Available(Select "MELSEC-QnA, Q".) |

*1 Note that the selection item display is changed from "MELSEC-A, QnA" to "MELSEC-A" and "MELSEC-QnA, Q".

## 11.7 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the Q Series PLC.

**1) Cable for the GOT and the Q Series PLC**

F920GOT-K

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | Q CPU direct connection (RS-232C connection)<br>Prepared by the user.<br>(Cable length 3m (9'10") or less)<br><br>Resistance per wire: 0.67 Ω or less<br>(Approximately AWG 28 or thicker) | GOT-F900<br>9-pin D-Sub, female | FG(class D grounding) (2) (3) (4) (5) (6) (8) (9)<br>FG(class D grounding) (2) (1) (5) (3) (6) (4) | Q Series<br>6-pin MINI DIN, male |

When connecting the F920GOT-K directly to the Q Series PLC, the below cable is required to transfer screen data.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| b) | GOT power cable (Power connection)<br>Prepared by the user.<br>(Cable length 3m (9'10") or less)<br><br>Resistance per wire: 0.67 Ω or less<br>(Approximately AWG 28 or thicker) | F920GOT-K<br>9-pin D-Sub, male | (5) (3)<br>(9) (4) | Q Series<br>6-pin MINI DIN, male |

F930GOT/F930GOT-K/F940GOT/F940WGOT

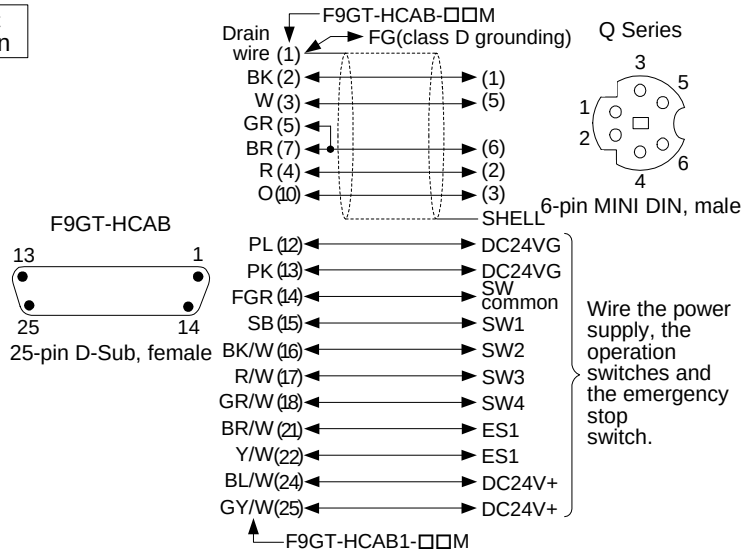
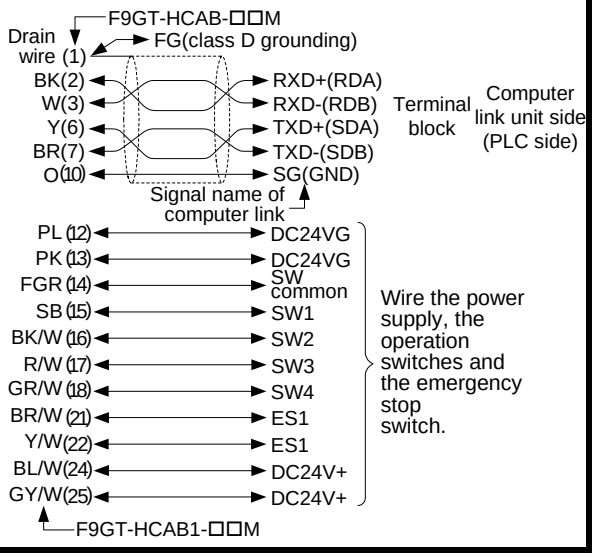
: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | Q CPU direct connection (RS-232C connection)<br>QC30R2 | GOT-F900<br>9-pin D-Sub, female | | Q Series<br>6-pin MINI DIN, male |
| b) | Q computer link (RS-422 connection) | GOT-F900<br>9-pin D-Sub, male | FG(class D grounding) (1) (6) (2) (7) (5)<br>FG(class D grounding) RXD+(RDA) RXD-(RDB) TXD+(SDA) TXD-(SDB) SG(GND)<br>Signal name of computer link | Terminal block<br>Serial communication unit side (PLC side) |
| c) | Q computer link (RS-232C connection)<br>Prepared by the user. | GOT-F900<br>9-pin D-Sub, female | (1) (2) (3) (4) (5) (6) (7) (8)<br>FG(class D grounding) (1)CD(DCD) (2)RD(RXD) (3)SD(TXD) (4)DR(DTR) (5)SG(GND) (6)DR(DSR) (7)RS(RTS) (8)CS(CTS)<br>Signal name of computer link | Serial communication unit side (PLC side)<br>9-pin D-Sub, male |

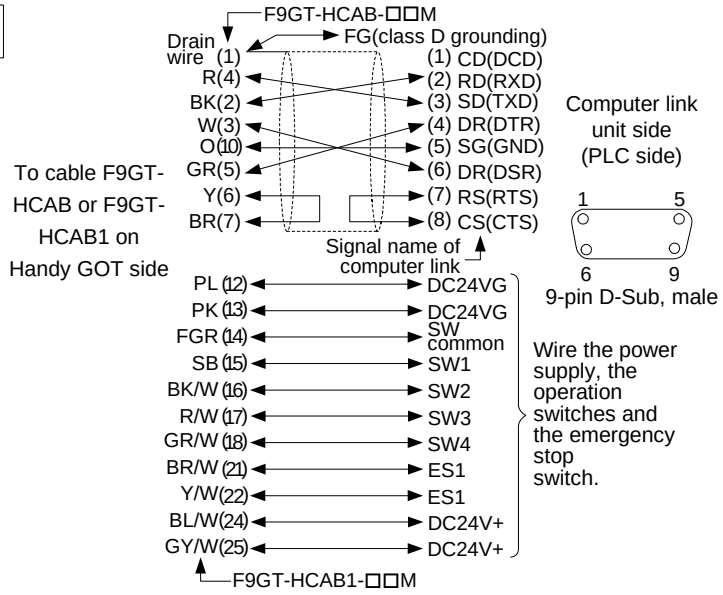
### 2) Cable for the Handy GOT and the Q Series PLC

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | F9GT-HCAB5-150 | RS-232C connection | |  | |
| d) | Q computer link<br>Prepared by the user | RS-422 connection | |  | |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | Prepared by the user | RS-232C connection |  | |

## 11.8 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the Q Series PLC.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen by a touch key *1.<br><br>*1 No touch key is available on the F920GOT-K. | The power of the Q Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the Q Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the Q Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the Q Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the Q Series PLC was referenced.<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected Q Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | When a PLC is not connected, the GOT defaults to the A mode.<br><br>• Cause<br>Check for the A or Q Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the changeover destination screen (excluding the head screen) is beyond the range for the A Series.<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later | From first product |

| Contents of trouble | Check points and countermeasures | OS version | | | |
|---|---|---|---|---|---|
| | | F940W | F940 | F930 | F920 |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 | – |
| | A device that does not exist in the Q Series PLC was referenced.<br><br>• Cause<br>On the head screen, a nonexistent device in the connected Q Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | | |
| | While the Q Series PLC is not connected, the connection mode for the A Series PLC is selected.<br><br>• Cause<br>Check for the A or Q Series was executed, the connection mode was automatically changed over, then the device range was checked.<br>This error occurs when the device range set on the head screen is beyond the range for the Q Series.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Connect the PLC. | | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later | From first product |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 | – |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later | From first product |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Software such as GX Developer and FX/WIN | In the personal computer connected to the GOT-F900, sequence programs cannot be monitored or transferred. Communication with the sequence software is disabled. An error message is displayed. | PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>For monitoring or transferring sequence programs, set a bar code reader to invalid and a printer to "DON'T USE".<br>If the PLC is connected, select the GOT-F900 equipped with two built-in RS-232C channels. |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. |
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | Q computer link, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 12. Connection of FX Series Positioning Unit (FX(2N)-10/20GM)

This chapter explains connection of the GOT-F900 Series display unit to some FX Series positioning units.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the FX Series positioning unit.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 12.1 |
| System Configuration | You can select the configuration between the GOT and the FX Series positioning unit and proper cables. | 12.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| FX Positioning Unit Selection | When GMCPU connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the FX Positioning unit. | – |
| Cautions | You can learn the restrictions in connecting the GOT to the FX Series positioning unit. | 12.3 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 12.4 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for FX Series positioning unit/GOT connection | 12.5 |
| Troubleshooting | Description of errors and how to fix them | 12.6 |

## 12.1 System Condition

When connecting the FX Series positioning unit, check the COM port designation, the OS version of the GOT-F900, and the applicable version of the screen creation software.

Compatibility when connecting FX Series positioning unit

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | – | ✓ | – | 4.10 | SW5-K | 2.50 |
| F930GOT-K | ✓ | – | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | – | ✓ | – | 6.10 | SW5-K | 2.50 |
| F940WGOT | ✓ | – | ✓ | – | 1.10 | SW5-K | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | – | 6.10 | SW5-K | 2.50 |
| F943 Handy GOT | – | – | It cannot be connected. Select the F940 handy GOT. | | | | |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

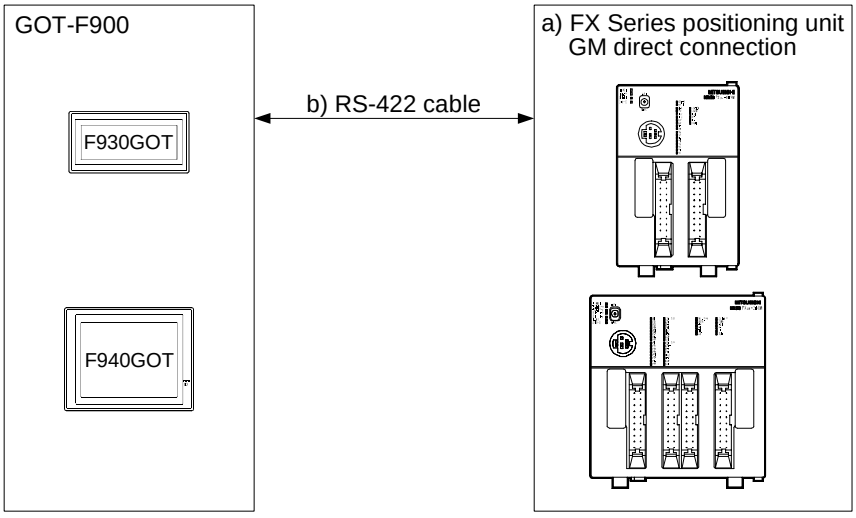
## 12.2 System Configuration

This section explains the cables required to connect the FX Series positioning unit (GMCPU connection) via RS-422. (It does not mean connection to the FX Series PLC CPU.)

### 12.2.1 Configuration for GMCPU direct connection (RS-422)

The FX Series positioning unit is equipped with a built-in RS-422 interface for positioning program. The GOT-F900 can be connected directly to this interface.

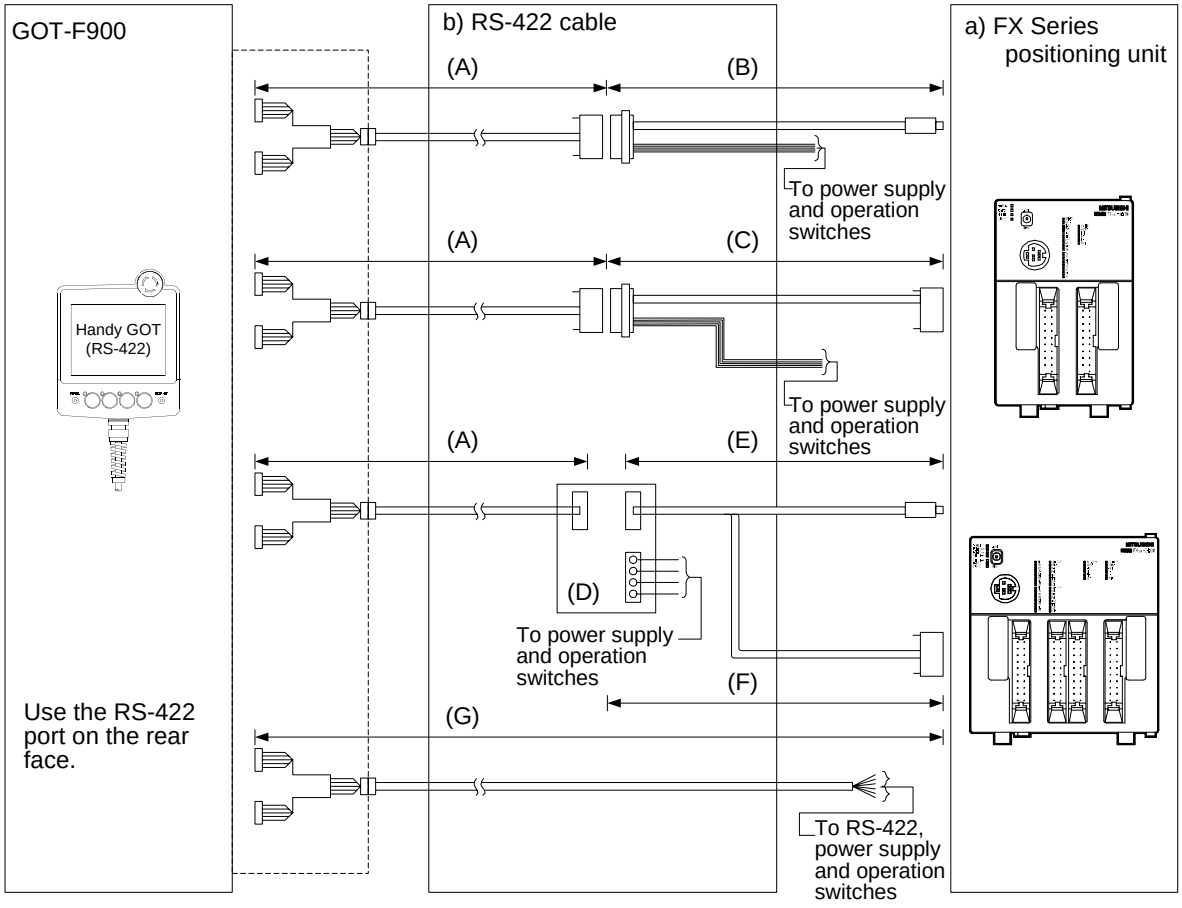
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) GM CPU | | b) RS-422 cable | Remarks |
|---|---|---|---|
| FX2N-10GM<br>FX2N-20GM | 8-pin MINI DIN | FX-50DU-CAB0<br>FX-50DU-CAB0L | Equivalent to the 8-pin MINI DIN port of the FX Series PLC |
| FX-10GM<br>FX-20GM<br>E-20GM | 20-pin D-Sub | FX-30DU-GM-CAB | |

- The L type cable, FX-50DU-CAB0L (cable with a right angle connector), cannot be used for F930GOT or F930GOT-K.

### 2) F940 Handy GOT




| a) GM CPU | | b) RS-422 cable | Remarks |
|---|---|---|---|
| FX2N-10GM<br>FX2N-20GM | 8-pin MINI DIN | (A) F9GT-HCAB-☐☐M<br>(B) F9GT-HCAB2-150<br>(D) F9GT-HCNB<br>(E) FX-50DU-CAB0 or FX-50DU-CAB0-1M<br>(G) F9GT-HCAB1-☐☐M | Equivalent to the 8-pin MINI DIN connector of the FX Series PLC |
| FX-10GM<br>FX-20GM<br>E-20GM | 20-pin D-Sub | (A) F9GT-HCAB-☐☐M<br>(C) Prepared by the user.<br>(D) F9GT-HCNB<br>(F) FX-30DU-GM-CAB<br>(G) F9GT-HCAB1-☐☐M | |

- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 12.3 Cautions on use of FX Series positioning unit

When using the GOT-F900 connected to the FX Series positioning unit, observe the following cautions on use.

### 12.3.1 Device specification

The device range specifications vary depending on the model of the FX Series positioning unit as shown in the table below.

| Device name and Nos. which can be monitored in GOT | FX2N-10GM<br>FX-10GM | FX2N-20GM<br>FX-20GM<br>E-20GM |
|---|---|---|
| Input relay (X) *1<br>X000~X377 | X000~X003<br>X375~X377 | X000~X007<br>X010~X067(when I/Os are extended)<br>X372~X377 |
| Output relay (Y)<br>Y0~Y67 | Y00~Y05 | Y00~Y67 |
| Auxiliary relay (M)<br>M0~M511 | M0~M511 | M0~M511 |
| Special auxiliary relay (M)<br>M9000~M9175 | M9000~M9175 | M9000~M9175 |
| Data register (D)<br>D0~D3999 | D0~D1999 | D0~D3999 |
| File register (D)<br>D4000~D6999 | D4000~D6999 | D4000~D6999 |
| Special data register (D)<br>D9000~D9599 | D9000~D9313 | D9000~D9599 |
| Index register (V, Z) *2<br>V0~V7<br>Z0~Z7(32 bits) | V0~V7<br>Z0~Z7(32 bits) | V0~V7<br>Z0~Z7(32 bits) |

*1 Input relays (X) X000 to X377 can be read only.

*2 When a screen is created using the DU/WIN, only V and Z are available as index registers.

### 12.3.2 Devices which can be monitored

Among bit devices, specify the device number of input relays (X) and output relays (Y) in octal (1, 2, 3 . . . 7, 10, 11. . . 17, 20). Specify the device number of other bit devices in decimal.
When specifying word devices, use the zero suppression function.
Only devices described in chapter 3.3 can be specified.

### 12.3.3 Caution on connection of a programming tool to the FX Series positioning unit

When programming the positioning unit, the GOT-F900 should be disconnected from the programming port of the GMCPU.
(Positioning programs cannot be transferred or monitored from a personal computer connected to the GOT-F900.)

## 12.4 Setting of Connected Equipment for GOT

The FX Series positioning unit connection parameters can be set using the GOT-F900 Series and the screen creation software DU/WIN.

### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

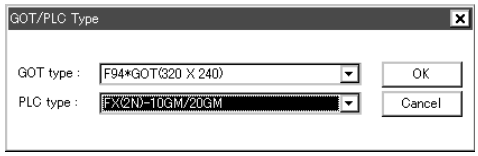
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE".<br>c) Set the following.<br>PLC TYPE:FX-GM SERIES<br>CONNECTION:CPU PORT (RS-422)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

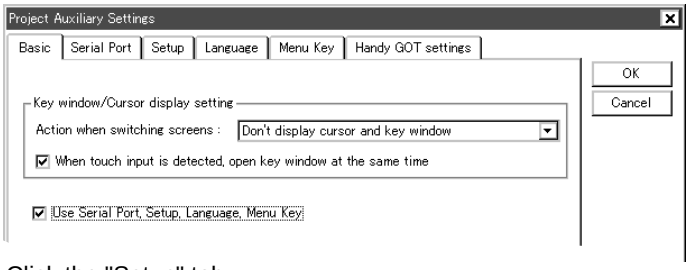
When the main menu screen change operation is enabled.

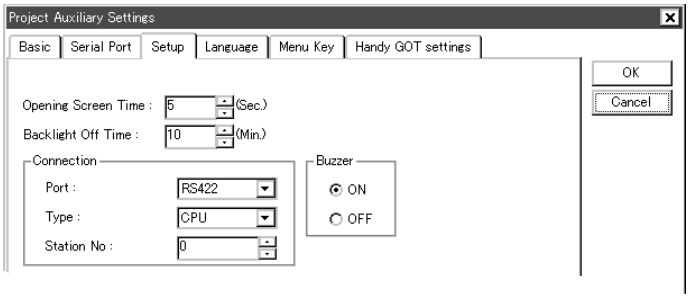
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE".<br>e) Set the following.<br>PLC TYPE: FX-GM SERIES<br>CONNECTION:CPU PORT (RS-422)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

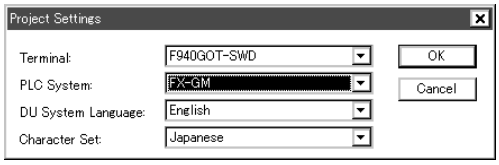
<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open GT Designer.<br><br>
b) Click the [New] button.<br>


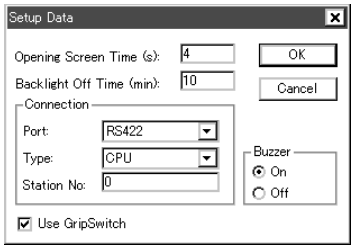
<br>
c) Set the following.<br>
GOT type: F940WGOT (480 × 234) <WIDE><br>
F94*GOT (320 × 240)<br>
F93*GOT (240 × 80)<br>
PLC type: FX(2N)-10GM/20GM<br>
Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
</table>
Click [OK].<br>
d) Set CPU direct connection (RS-422) of the GOT-F900.<br>
Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br>


<br>
Click the "Setup" tab.<br>


<br>
e) Set the following.<br>
Port : RS-422<br>
Type : CPU<br>
DST Station No. (Station No.) : 00<br>
GOT Station No. (–) : –
</td><td>
The "Select Project" dialog box appears.<br><br>
The "GOT/PLC Type" dialog box appears.<br><br><br>

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br><br>b) On the menu, select "File"-"New".<br> 

<br>c) Set the following.<br>Terminal: F940WGOT-TWD (V)(H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: FX-GM<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set RS-422 of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

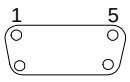
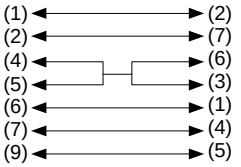
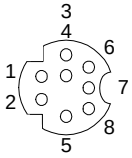
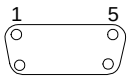
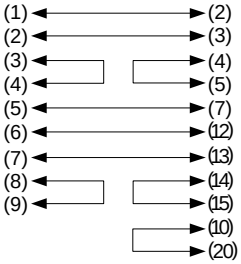
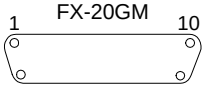
<br>e) Set the following.<br>Port: RS-422<br>Type: CPU<br>DST Station No. (Station No.): 00<br>GOT Station No. (–) : –</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For setting of RS-232C/RS-422 of the FX Series positioning unit, refer to e) in [Creation] above.</td><td>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

## 12.5 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the FX Series positioning unit

**1) Cable for the GOT and the FX Series positioning unit**

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>FX Series positioning unit connection<br>FX-50DU-CAB0<br>FX-50DU-CAB0-1M<br>FX-50DU-CAB0L | GOT-F900<br>  <br><br>9-pin D-Sub, male |  <br> | FX2N-10GM<br>FX2N-20GM<br>  <br><br>8-pin MINI DIN, male |
| b) | RS-422 connection<br>FX Series positioning unit connection<br>FX-30DU-GM-CAB | GOT-F900<br>  <br><br>9-pin D-Sub, male |  <br> | FX-10GM<br>E-20GM<br>FX-20GM<br>  <br><br>20-pin D-Sub, male |

### 2) Cable for the Handy GOT and the FX Series positioning unit

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB2-150 or F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | F9GT-HCAB2-150<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-□□M<br>Drain wire (1) — FG(class D grounding)<br>BK(2) → (2)<br>W (3) → (1)<br>Y (6) → (7)<br>BR(7) → (4)<br>BL (8) → (6)<br>GR(9) → (5)<br>O (10) → (3)<br>SHELL<br>PL (12) → DC24VG<br>PK (13) → DC24VG<br>FGR (14) → SW common<br>SB (15) → SW1<br>BK/W (16) → SW2<br>R/W (17) → SW3<br>GR/W (18) → SW4<br>BR/W (21) → ES1<br>Y/W(22) → ES1<br>BL/W(24) → DC24V+<br>GY/W(25) → DC24V+<br>F9GT-HCAB1-□□M | FX2N-10GM<br>FX2N-20GM<br>3 4 6<br>1 7<br>2 8<br>5<br>8-pin MINI DIN, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | Prepared by the user<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-□□M<br>Drain wire (1) — FG(class D grounding)<br>BK(2) → (2)<br>W (3) → (12)<br>R (4) → (4)<br>GR(5) → (5)<br>Y (6) → (3)<br>BR(7) → (13)<br>BL (8) → (14)<br>GR(9) → (15)<br>O (10) → (7)<br>(10)<br>(20)<br>(8)<br>(21)<br>Hood<br>PL (12) → DC24VG<br>PK (13) → DC24VG<br>FGR (14) → SW common<br>SB (15) → SW1<br>BK/W (16) → SW2<br>R/W (17) → SW3<br>GR/W (18) → SW4<br>BR/W (21) → ES1<br>Y/W(22) → ES1<br>BL/W(24) → DC24V+<br>GY/W(25) → DC24V+<br>F9GT-HCAB1-□□M | FX-10GM<br>E-20GM<br>FX-20GM<br>1 10<br>11 20<br>20-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 12.6 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FX Series positioning unit.

**1) GOT-F900**

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the FX Series positioning unit is turned off.<br>• Cause<br>Communication is disabled because the power of the FX Series positioning unit is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the FX Series positioning unit.<br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the FX Series positioning unit was tried.<br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the FX Series positioning unit was referenced. (Example: While the FX2N-10GM was connected, a device provided only in the FX2N-20GM was specified for numeric input.)<br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected FX Series positioning unit is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the FX Series positioning unit was referenced. (Example: While the FX2N-10GM was connected, a device provided only in the FX2N-20GM was specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected FX Series positioning unit is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | An FX Series positioning unit, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 13. Connection of FREQROL (S500/E500/A500) Inverter

This chapter explains the procedure to connect the GOT-F900 Series display unit to the FREQROL Series (S500/E500/A500) inverter.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the FREQROL Series inverter.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 13.1 |
| System Configuration | You can select the configuration between the GOT and the FREQROL inverter and proper cables. | 13.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting in FREQROL Inverter | When INVCPU connection is selected, the GOT-F900 is automatically set to fixed values. No setting is required in the FRQROL inverter. | 13.3 |
| Cautions on Use of FREQROL Series Inverter | You can learn the restrictions in connecting the GOT to the FREQROL inverter. | 13.4 |
| Correspondence between GOT Devices and Parameters | You can learn correspondence between GOT devices and parameters as well as communication. | 13.5 |
| FREQROL Inverter Parameter List | You can compare parameters of the A500, the E500 and the S500. | 13.6 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 13.7 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for FREQROL inverter/GOT connection | 13.8 |
| Troubleshooting | Description of errors and how to fix them | 13.9 |

## 13.1 System Condition

When connecting the FREQROL Series inverter, check the COM port designation, the OS version of the GOT-F900, and the applicable versions of the screen creation software.

Compatibility when connecting FREQROL (S500/E500/A500) Inverter

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | – | ✓ | – | 4.10 | SW5-K | 2.50 |
| F930GOT-K | ✓ | – | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | – | ✓ | – | 6.10 | SW5-K | 2.50 |
| F940WGOT | ✓ | – | ✓ | – | 1.10 | SW5-K | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | – | 6.10 | SW5-K | 2.50 |
| F943 Handy GOT | – | – | It cannot be connected. Select the F940 handy GOT. | | | | |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

## 13.2 System Configuration

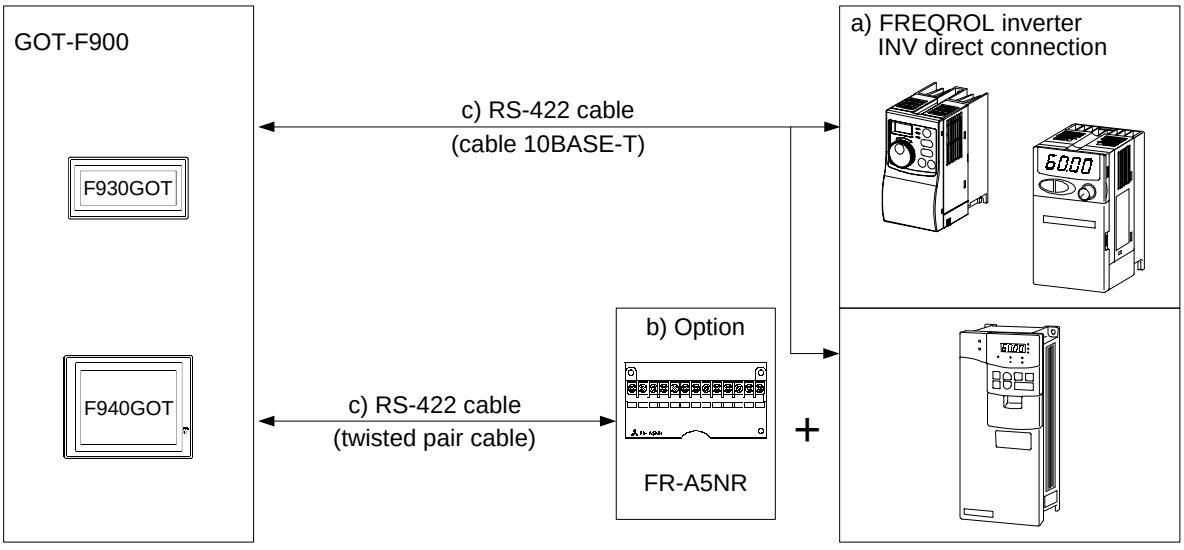
This section explains the cables required to connect the FREQROL Series inverter through INV direct connection (RS-422). (Up to 10 FREQROL Series inverters can be connected to one GOT-F900 unit.)

### 13.2.1 Configuration for CPU Direct Connection (RS-422)

The GOT-F900 can be connected to the FREQROL Series inverter equipped with built-in PU port (A500/E500 Series), the FR-A5NR computer link option (A500 Series) or the S500 Series equipped with the RS-485 communication function.
The GOT-F900 can be directly connected to the interface to control two or more inverters.

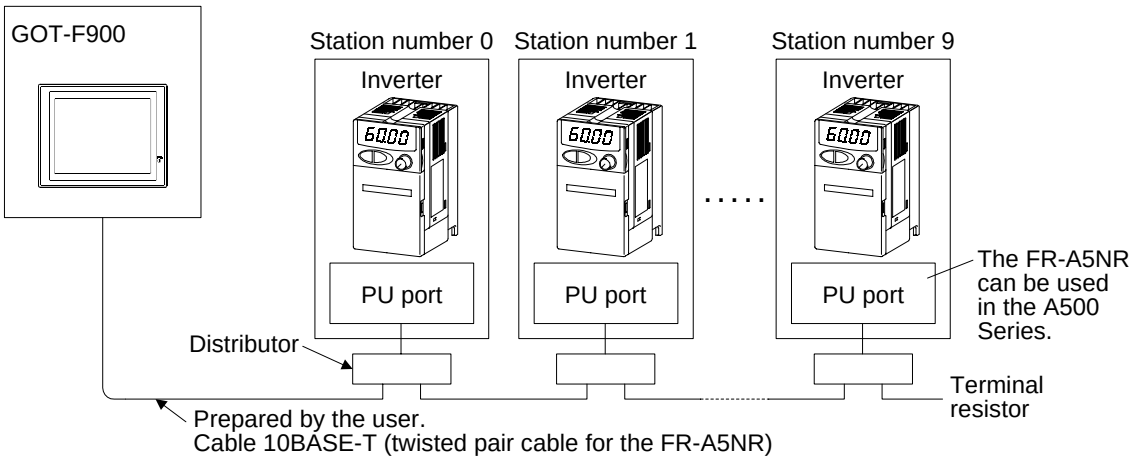
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**

a) When one inverter is connected



b) When two or more inverters are connected

UP to 10 inverters can be connected through RS-422.




- For connection between the GOT-F900 and the distributor, refer to a) on the previous page.
- For connection between the distributors, prepare connectors and cables while referring to section 13.8 later. Do not use the commercial straight connection type Ethernet 10BASE-T cable (Category 3 or 5). (If this cable is used, inverters will have a short circuit because the pins number 2 and 8 are connected to power supply.)
- Sample products (connector, cable, and distributor) are introduced in Cable Diagram in this chapter.

| a) INV | | b) Option | c) RS-422 cable | Remarks |
|---|---|---|---|---|
| S500 | PU port | | Prepared by the user. (cable 10BASE-T) | It is called "RS-485 communication port". |
| E500<br>A500 | | | | |
| A500 | | FR-A5NR | Prepared by the user. (twisted pair cable) | Option for computer link connection is required. |

The A500 Series can be connected using the PU port or the option for computer link connection. Though the port of the S500 Series is the RS-485 communication port, it is called "PU port" in this manual.

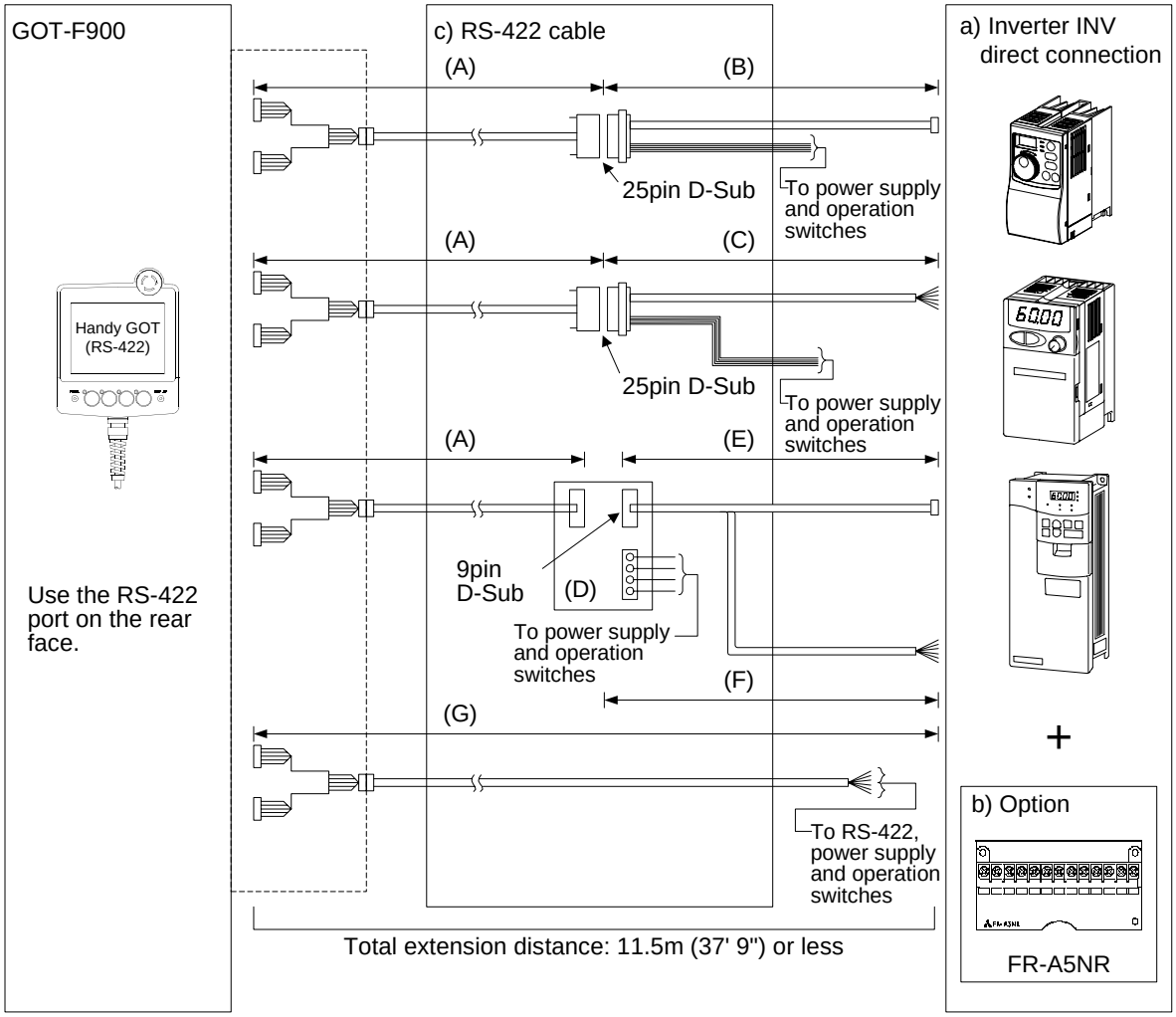
c) Attaching a terminal resistor

Communication may be affected by reflection depending on the transmission speed and the transmission distance. If communication is hindered by this reflection, provide a terminal resistor.

- When the PU port or the RS-485 port is used for connection
  Attach a terminal resistor between the pin number 3 (RDA) and the pin number 6 (RDB). Because the terminal resistor cannot be attached, use the distributor. Attach the terminal resistor only to the inverter located farthest from the GOT-F900. (terminal resistor: 100 Ω)
- When the FR-A5NR is used for connection
  Attach a terminal resistor chip (included with the FR-A5NR) between the terminals RDB and RDR of the last inverter.

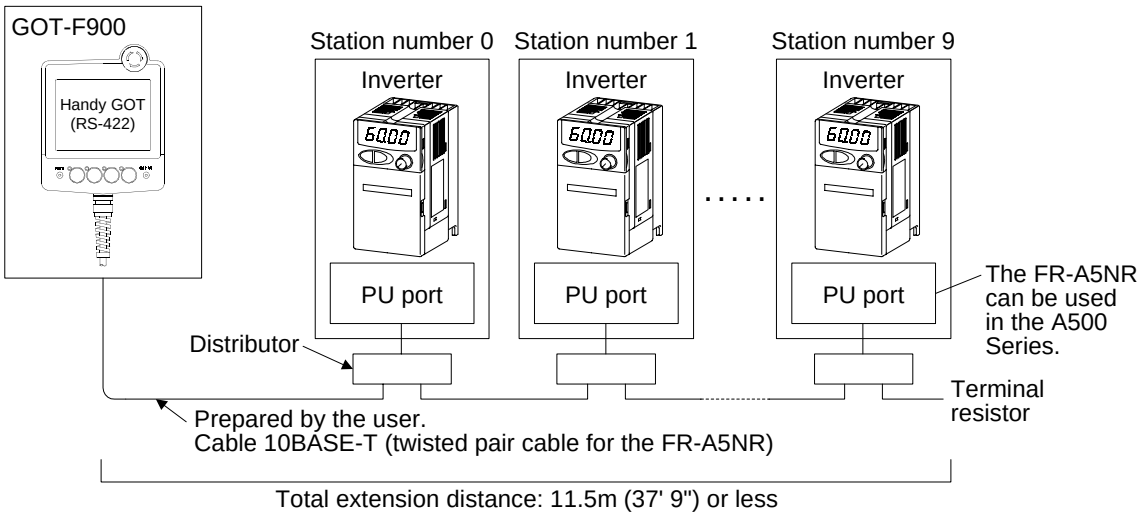
**2) F940 Handy GOT (RS-422)**

a) When one inverter is connected



b) When two or more inverters are connected

Up to 10 inverters can be connected through RS-422.




- For connection between the GOT-F900 and the distributor, refer to a) on the previous page.
- For connection between the distributors, prepare connectors and cables while referring to section 13.8 later. Do not use the commercial straight connection type Ethernet 10BASE-T cable (Category 3 or 5). (if this cable is used, inverters will have a short circuit because the pins number 2 and 8 are connected to power supply.)
- Sample products (connector, cable, and distributor) are introduced in Cable Diagram in this chapter.

| a) INV | | b) Option | c) RS-422 cable | Remarks |
|---|---|---|---|---|
| S500 | PU port | | (A) F9GT-HCAB-☐☐M | It is called "RS-485 communication port". |
| E500 | | | (B) Prepared by the user. (cable 10BASE-T) | |
| A500 | | | (D) F9GT-HCNB | |
| | | | (E) Prepared by the user. (cable 10BASE-T) | |
| | | | (G) F9GT-HCAB1-☐☐M | |
| A500 | | FR-A5NR | (A) F9GT-HCAB-☐☐M | Option for computer link connection is required. |
| | | | (C) Prepared by the user. (twisted pair cable) | |
| | | | (F) Prepared by the user. (twisted pair cable) | |
| | | | (G) F9GT-HCAB1-☐☐M | |

The A500 Series can be connected using the PU port or the option for computer link connection.
Though the port of the S500 Series is the RS-485 communication port, it is called "PU port" in this manual.

c) Attaching a terminal resistor

Communication may be affected by reflection depending on the transmission speed and the transmission distance. If communication is hindered by this reflection, provide a terminal resistor.

- When the PU port or the RS-485 port is used for connection
  Attach a terminal resistor between the pin number 3 (RDA) and the pin number 6 (RDB). Because the terminal resistor cannot be attached, use the distributor. Attach the terminal resistor only to the inverter located farthest from the GOT-F900. (terminal resistor: 100 Ω)
- When the FR-A5NR is used for connection
  Attach a terminal resistor chip (included with the FR-A5NR) between the terminals RDB and RDR of the last inverter.

## 13.3 Setting in FREQROL Inverter

When connecting the FREQROL Series inverter, the parameter should be set as described below.

### 13.3.1 Communication Setting Specifications

This section explains the contents to be set in the FREQROL Series inverter.

**1) Setting the transmission specifications**

Set the transmission specifications of the inverter to realize the transmission specifications shown in the table below. For the setting method, refer to the manual of the inverter.
For the communication setting parameters, refer to the next section.

| Item | | | RS-422 |
|---|---|---|---|
| Communication speed | | | 19200 bps |
| Control protocol | | | Asynchronous system |
| Communication method | | | Half-duplex method |
| Data format | Character system | | ASCII (7 bits) |
| | Data bit | | 7 bits |
| | Terminator | | CR: Provided, CF: Not provided |
| | Check system | Parity check | Provided (odd) |
| | | Sum check | Provided |
| | Waiting time setting | | Not provided |
| | Stop bit length | | 1 bit |

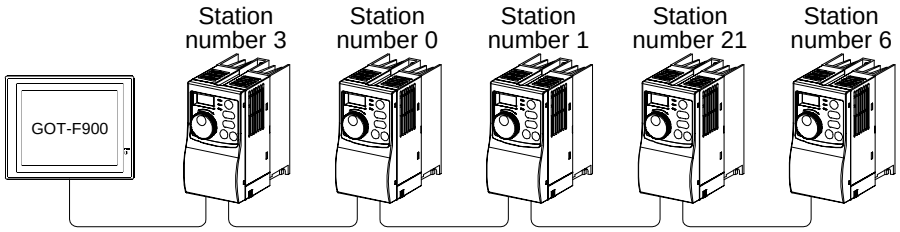
- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting the station number**

For the communication setting parameters, refer to the next section.

**Setting in the Inverter**

Set each station number in the range from 00 to 31 while making sure that one station number is used only once.
In the case of RS-422 connection, 10 inverters can be connected at maximum.
The station number can be set without regard to the inverter connection order. No problem is expected even if station numbers are not consecutive.




Example of station number setting

**Setting in the GOT-F900**

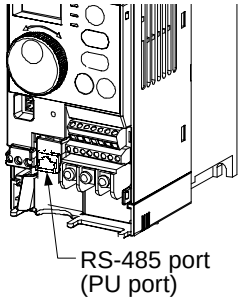
Leave the station number setting in "00".

### 13.3.2 Setting Examples

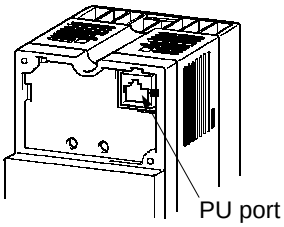
**1) Communication port and corresponding parameters**

When connecting the GOT-F900 to the inverter, parameters corresponding to the communication port should be set.

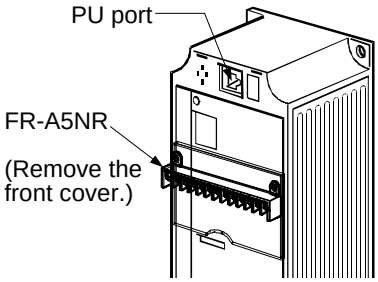
S500 Series
Remove the front cover.




E500 Series
Remove the operation panel.




A500 Series
Remove the operation panel.




| Model | Communication port | GOT connection destination | Parameters corresponding to inverter |
|---|---|---|---|
| A500 Series | Built in inverter | PU port | Pr117 to Pr124 |
| | Option | FR-A5NR computer link option | Pr331 to Pr342 |
| E500 Series | Built in inverter | PU port | Pr117 to Pr124 |
| S500 Series | Built in inverter (only in certain models) | RS-485 port | n1 to n12 |

**2) Communication setting in inverter**

Set the following parameters using the PU (parameter unit) to realize the communication specifications of the GOT-F900.
Though these parameters can be monitored from the GOT-F900, do not change them. If they are changed, communication with the GOT-F900 is disabled.

| Parameter number | | | | Communication parameter | Setting | |
|---|---|---|---|---|---|---|
| S500 (RS-485) | A500 (PU) | A500 (FR-A5NR) | E500 (PU) | | Set value | Contents of setting |
| n1 | Pr. 117 | Pr. 331 | Pr. 117 | Inverter station number | 00~31 | 10 inverters can be connected at maximum. |
| n2 | Pr. 118 | Pr. 332 | Pr. 118 | Communication speed | 192 | 19200 bps |
| n3 | Pr. 119 | Pr. 333 | Pr. 119 | Stop bit length | 10 | Data length: 7 bits<br>Stop bit: 1 bit |
| n4 | Pr. 120 | Pr. 334 | Pr. 120 | Parity check yes/no | 1 | 0: No parity check<br>1: Odd parity<br>2: Even parity |
| n5 | Pr. 121 | Pr. 335 | Pr. 121 | Communication retry count | S500:——–<br>A500:9999<br>E500:9999 | No abnormal stop |
| n6 | Pr. 122 | Pr. 336 | Pr. 122 | Communication check time interval | S500:999<br>A500:999<br>E500:999 | Communication check stop |
| n7 | Pr. 123 | Pr. 337 | Pr. 123 | Waiting time setting | 0 | 0ms |
| n11 | Pr. 124 | Pr. 341 | Pr. 124 | CR•E LF yes/no selection | 1 | CR: Provided,<br>LF: Not provided |
| Pr.79 | Pr. 79 | Pr. 79 | Pr. 79 | Operation mode | 0 | External operation mode at power ON |
| n10 | – | Pr. 340 | – | Link start mode selection | 1 | Computer link |
| n12 | Pr. 342 | Pr. 342 | – | $E^2$PROM write selection | 0 | Write to RAM and EEPROM |
| – | – | – | Pr. 146 | Frequency setting command selection | 999 | Volume disabled |

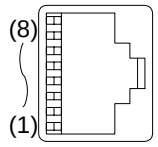
a) S500 Series
- Parameters n1 to n7 and n10 to n12 are set in the built-in parameter unit.
- When parameters are monitored from the GOT-F900, they correspond to parameters Pr. 331 to Pr. 337 and Pr340 to Pr. 342 respectively.

### 13.3.3 Inverter Connector Specifications

**1) Pin layout in the PU port**

| Pin number | Signal name | Remarks |
|---|---|---|
| 1 | GND (SG) | |
| 2 | (P5S) | Not used |
| 3 | RXD+ (RDA) | |
| 4 | TXD- (SDB) | |
| 5 | TXD+ (SDA) | |
| 6 | RXD- (RDB) | |
| 7 | GND (SG) | |
| 8 | (P5S) | Not used |

When seen from the front of the inverter (receptacle side)

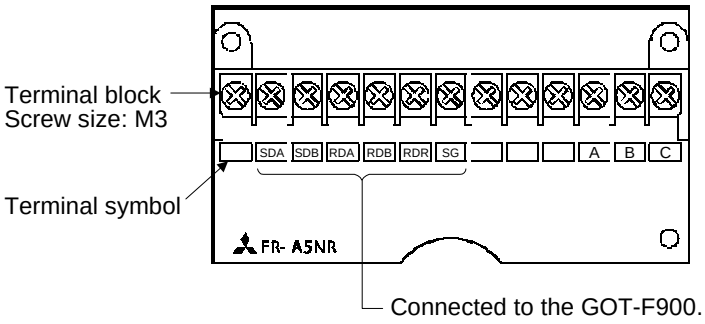



Modular jack

The contents inside ( ) indicate symbols described in the inverter manual.
The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit. Do not use them in RS-422 communication.

**2) Terminal block layout in the FR-A5NR computer link option**

Attach this option to the A500 Series.



### 13.3.4 Specification of Station Number in Creating Screen

An inverter can be selected out of multiple units concurrently used by setting the station number under numerical setting in screen creation for GOT-F900.
The station number specified in the screen creation software corresponds to the station number specified for the parameter in an inverter.

There are a direct and an indirect methods to specify the station number when creating a screen.
If an individual screen is created for each inverter, it is a direct specification. Only one number corresponding to the inverter can be selected on one screen in order to edit its numerical value.
If one screen is created for selecting an unit out of multiple inverters to edit its value, it is an indirect specification. It is more effective in screen creation because the inverter of which the numerical value is to be changed can be selected on one screen using the GOT-F900 internal data register (GD).

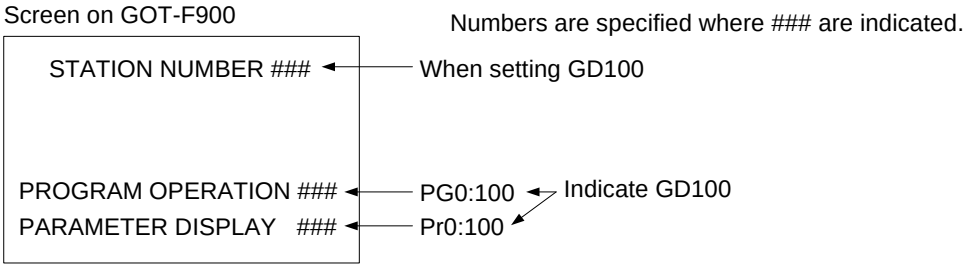
**1) Direct specification**

When setting the device, specify the station number of the inverter of which data is to be changed.
Setting range: 0 to 31

**2) Indirect specification**

When setting the device, indirectly specify the station number of the inverter of which data is to be changed using the 16-bit GOT internal data register (GD100 to GD115).
Setting range: 100 to 115 (Corresponds to each devive from GD100 to GD115)

Setting example




a) Set the GOT internal data register (GD100) as the station number under numerical setting in the screen creation software. (Upper)

b) Specify the device of the parameter in the inverter of which numerical value is to be displayed or edited as follows:
PG0 (parameter) for Device, 100 for Station number (Middle)
Pr0 (parameter) for Device, 100 for Station number (Lower)

c) The parameter (PG0 and Pr0) of the inverter with the station number corresponding to GD100 is displayed.

## 13.4 Cautions on Use of FREQROL Series Inverter

When using the GOT-F900 connected to the FREQROL Series inverter, observe the following cautions on use.

### 13.4.1 Device specification

Devices correspond to parameters of the FREQROL Series inverter. Accordingly, the device range specifications vary depending on the model.
For the details of parameters, refer to section 13.6.

| Device names and devices which can be monitored in GOT | a) Unsigned 16-bit | b) Screen changeover | c) System information/ control device | d) Status monitor | e) Time switch | f) Others |
|---|---|---|---|---|---|---|
| Control status (S) | – | – | – | △ | – | ✓ |
| GOT internal bit register (GB) | – | – | ✓ | – | – | ✓ |
| Alarm code (A) | ✓ | – | – | – | – | – |
| Parameter (Pr) | ✓ | – | – | ✓ | – | ✓ |
| Program operation (PG) | ✓ | – | – | ✓ | – | ✓ |
| Special parameter (SP) | ✓ | – | – | ✓ | – | ✓ |
| GOT internal data register (GD) | ✓ | ✓ | ✓ | ✓ | – | ✓ |

- Among word devices, only unsigned 16-bit numeric values can be used.
  GOT internal data registers (GD) are excluded.
- In screen changeover, GOT internal data registers (GD) can be specified.
- Only GOT internal data registers (GD) can be specified for the system information of the GT Designer. GOT internal bit registers (GB) and GOT internal data registers (GD) only can be specified for control devices of the DU/WIN.
- In the status monitoring function, the alarm code (A) device cannot be specified as the operation device (word SET).
  In the control status (S) device, only one operation (bit) device can be specified.
- Because the time switch cannot use the bit device control status (S), this function is not available.
- The alarm code (A) device cannot be specified in the following devices.
  Recipe function — Write device of operation panel (word SET)
  Bar code — Numeric input
  ASCII input — Operation device of touch key (word SET)
  Device for storing number of histories of alarm history
  — Device for storing number of occurrences of alarm list

### 13.4.2 Changeover from the GOT (communication) to the PU operation mode

- Not available in the S500 Series.
- Available in the E500 Series.
- Not available in the A500 Series if the GOT is connected to the communication board FR-A5NR.

### 13.4.3 When "8888" or "9999" is set to a parameter (Pr) of the inverter

Numbers "8888" and "9999" have special meaning respectively. When specifying such numbers from the GOT-F900, specify them as follows.

| Set value on inverter side | Value to be specified in GOT-F900 |
|---|---|
| 8888 | 65520 |
| 9999 | 65535 |

### 13.4.4 Specification of the program operation (PG) devices

When setting the start time (PG10 to PG19, PG40 to PG49, PG70 to PG79), specify the hour or the minute to the upper 8 bits, and specify the minute or the second to the lower 8 bits.

Example: When setting "13:35"

| Time to be specified | 13 (hour) | 35 (minute) | Remarks |
|---|---|---|---|
| Convert the hour and the minute to hexadecimal number respectively. | H0D | H23 | Hexadecimal (HEX) |
| Add the upper bits and the lower bits. | Input "H0D23" or "3363". | | |

### 13.4.5 Caution on setting of the calibration parameters (Pr900 to Pr905)

When setting the calibration parameters (Pr900 to Pr905), the following value should be written to the second extension parameter (SP108) depending on the used device number and inverter model.

| Value to be written to second extension parameter (SP108) | Description |
|---|---|
| H00 | Offset/gain |
| H01 | Analog |
| H02 | Analog value of terminal |

### 13.4.6 Restriction in simultaneous specification of PG and Pr devices on one screen

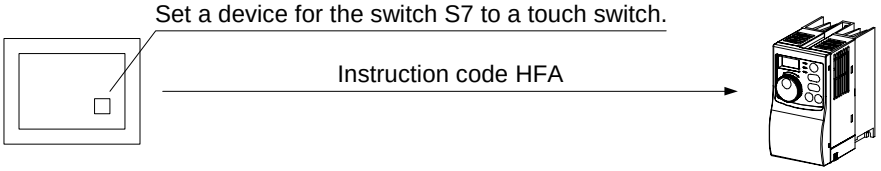
When creating a screen of the GOT-F900, specify either program operation (PG) device or parameter (Pr. 900 to Pr. 905) device. Do not specify both on one screen.

### 13.4.7 Caution on connecting to the PU port (only in the E500 and the A500)

When the power of the inverter is turned on, the external operation mode is automatically selected.
In order to rewrite values of parameters, etc. in the GOT-F900, changing operation mode to "PU operation" in advance is required.
To change the operation mode, write "2" to the special parameter SP123.

## 13.5 Correspondence Between Devices of GOT and Parameters

The devices of the GOT-F900 correspond to the parameters and the communication data of the inverter as shown in the following table.
For the device range, refer to section 3.3.

<table>
<tr><th>Device name in GOT-F900</th><th>Function of inverter</th></tr>
<tr><td>Control status (S)</td><td>
When the inverter status monitor (read) and the operation command (write) of the inverter are changed over by instruction codes, b0 to b7 correspond to devices S0 to S7 and can be read/written.<br>
[RD]: Read enabled<br>
[WR]: Write enabled<br>
[RD/WR]: Read and write enabled
<table>
<tr><th>Item</th><th>Instruction code</th><th>Contents of data</th></tr>
<tr><td>Inverter status monitor (RD)</td><td>H7A</td><td>
H00 to HFF: Operation command operation<br>
b7 b0<br>
0 0 0 0 0 0 1 0<br>
(In the case of example 1)<br>
The examples below show cases in the A500 Series.<br>
Example 1: H02 : During forward rotation<br>
Example 2: H80 : Stop due to alarm<br>
b0: Inverter running (RUN)*<br>
b1: Forward rotation (STF)<br>
b2: Reverse rotation (STR)<br>
b3: Up to frequency (SU)*<br>
b4: Overload (OL)*<br>
b5: Momentary stop (IPF)*<br>
b6: Frequency detection (FU)*<br>
b7: Alarm occurrence*<br>
As to the signals marked with "*", the output signal varies depending on the setting of Pr. 190 to Pr. 195 (output terminal function selection).
</td></tr>
<tr><td>Operation command (WR)</td><td>HFA</td><td>
H00 to HFF: Operation command operation<br>
b15 b7 b0<br>
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0<br>
(In the case of example 1)<br>
The examples below show cases in the A500 Series.<br>
Example 1: H02 : Forward rotation<br>
Example 2: H80 : Output stop<br>
b0: Current input selection (AU)*<br>
b1: Forward rotation (STF)<br>
b2: Reverse rotation (STR)<br>
b3: Low speed (RL)*<br>
b4: Middle speed (RM)*<br>
b5: High speed (RH)*<br>
b6: Second acceleration/deceleration (RT)*<br>
b7: Output stop (MRS)<br>
As to the signals marked with "*", the input signal varies depending on the setting of Pr. 180 to Pr. 186 (input terminal function selection).
</td></tr>
</table>
When the operation command "b7: Output stop (MRS)" is executed by a touch key on the display unit:.<br>
Set a device for the switch S7 to a touch switch.<br>
Instruction code HFA<br>

</td></tr>
</table>

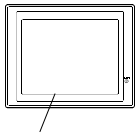
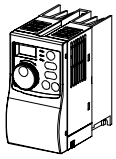
<table>
<tr><th>Device name in GOT-F900</th><th>Function of inverter</th></tr>
<tr><td>Alarm code (A)</td><td>
The contents of abnormalities number 1 to 8 in the inverter correspond to devices A0 to A7 in the GOT. (From the GOT-F900, only "Most recent No.1, No.2/alarm display clear" can be executed.)<br>In the GOT-F900, abnormalities can be read only.
<table>
<tr><th>Item</th><th>Instruction code</th><th>Contents of data</th></tr>
<tr><td>Contents of abnormality (RD)</td><td>H74 to H77</td><td>
H0000 to HFFFF: Contents of two previous abnormalities<br>
Example of abnormality contents display (when the instruction code is "H74")<br>
Example: When the read data is "H30A0"<br>
b15 b8 b7 b0<br>
0 0 1 1 0 0 0 0 1 0 1 0 0 0 0 0<br>
Previous abnormality Current abnormality<br>
Data (H30) = Contents (THT) Data (HA0) = Contents (OPT)<br>
Contents of abnormality (Nos. 1, 3, 5, 7) Contents of abnormality (Nos. 2, 4, 6, 8)<br>
Abnormality data correspondence table
<table>
<tr><th>Data</th><th>Contents</th><th>Data</th><th>Contents</th></tr>
<tr><td>H00</td><td>No abnormality</td><td>HA0</td><td>OPT</td></tr>
<tr><td>H10</td><td>0C1</td><td>HB0</td><td>PE</td></tr>
<tr><td>H11</td><td>0C2</td><td>HB1</td><td>PUE</td></tr>
<tr><td>H12</td><td>0C3</td><td>HB2</td><td>RET</td></tr>
<tr><td>H20</td><td>0V1</td><td>HC0</td><td>CPU</td></tr>
<tr><td>H21</td><td>0V2</td><td>HC1</td><td>CTE</td></tr>
<tr><td>H22</td><td>0V3</td><td>HC2</td><td>P24</td></tr>
<tr><td>H30</td><td>THT</td><td>HD5</td><td>MB1</td></tr>
<tr><td>H31</td><td>THM</td><td>HD6</td><td>MB2</td></tr>
<tr><td>H40</td><td>FIN</td><td>HD7</td><td>MB3</td></tr>
<tr><td>H41</td><td>–</td><td>HD8</td><td>MB4</td></tr>
<tr><td>H50</td><td>IPF</td><td>HD9</td><td>MB5</td></tr>
<tr><td>H51</td><td>UVT</td><td>HDA</td><td>MB6</td></tr>
<tr><td>H60</td><td>OLT</td><td>HDB</td><td>MB7</td></tr>
<tr><td>H70</td><td>BE</td><td>HA1</td><td>OP1</td></tr>
<tr><td>H80</td><td>GF</td><td>HA2</td><td>OP2</td></tr>
<tr><td>H81</td><td>LF</td><td>HA3</td><td>OP3</td></tr>
<tr><td>H90</td><td>OHT</td><td></td><td></td></tr>
</table>
</td></tr>
</table>
</td></tr>
<tr><td>Parameter (Pr)</td><td>
Parameter devices in the GOT-F900 correspond to parameters in the inverter respectively.<br>
For the details of each parameter, refer to the manual of the inverter.<br><br>
Caution<br>
Some parameters cannot be written or read.<br><br>
1) In the case of S500 Series<br>
- Pr. 37 cannot be read or written from the GOT.<br>
- When monitoring Pr. 10 or later, write "1" to Pr. 30.<br>
2) Parameter device range<br>
The ranges of Pr. 288 to Pr. 299, Pr. 343 to Pr. 899, Pr. 906 to Pr. 921 and Pr. 942 to Pr. 989 cannot be monitored from the GOT-F900.
</td></tr>
</table>

| Device name in GOT-F900 | Function of inverter |
|---|---|
| Program operation (PG) | (Only in the A500 Series)<br>Parameters Pr. 201 to Pr. 230 in the inverter correspond to devices PG0 to PG89.<br>**1. Preparation**<br>When using the program operation function, set Pr. 79 in the inverter to "5".<br>Confirm "4. Related parameters" below in accordance with the contents of operation.<br>**2. Explanation**<br>In the inverter, 30 parameters Pr. 201 to Pr. 230 are classified into 3 groups each of which consists of 10 parameters. The three types of contents, the time, the operation frequency and the rotation direction, are set to each parameter.<br>In the GOT-F900, by monitoring PG0 to PG89, the contents of setting in Pr201 to Pr230 can be easily used without considering the instruction codes of the inverter (described below). |

| | Setting point | Rotation direction, frequency, start time | |
|---|---|---|---|
| Group 1 | No.1 | Pr.201 | Correspond to PG0 to PG29. |
| | 2 | Pr.202 | |
| | 3 | Pr.203 | |
| | 4 | Pr.204 | |
| | . | . | |
| | . | . | |
| | . | . | |
| | 10 | Pr.210 | |
| Group 2 | No.11 | Pr.211 | Correspond to PG30 to PG59. |
| | . | . | |
| | . | . | |
| | . | . | |
| | 20 | Pr.220 | |
| Group 3 | No.21 | Pr.221 | Correspond to PG60 to PG89. |
| | . | . | |
| | . | . | |
| | . | . | |
| | 30 | Pr.230 | |

**3. Correspondence table between device PG and set value of each parameter**

| Parameter number for inverter | Device in GOT-F900 | | |
|---|---|---|---|
| | Operation frequency | Start time | Rotation direction |
| Pr. 201 to Pr. 210 (Group 1) | PG0 to PG9 | PG10 to PG19 | PG20 to PG29 |
| Pr. 211 to Pr. 220 (Group 2) | PG30 to PG39 | PG40 to PG49 | PG50 to PG59 |
| Pr. 221 to Pr. 230 (Group 3) | PG60 to PG69 | PG70 to PG79 | PG80 to PG89 |

<table>
<tr><th>Device name in GOT-F900</th><th>Function of inverter</th></tr>
<tr><td>Program operation (PG)</td><td>
4. Contents of communication in the GOT-F900 (reference)<br>
When the PG device is monitored in the GOT-F900, the instruction codes are issued and communication is executed.<br>
The instruction codes are automatically issued in the following procedure, and the user does not have to consider it.<br>
Procedure for communication with inverter<br>
Station number 5<br>
 <br>
PG0 is read.<br>
Instruction codes (1)FF (2)6C (3)3D<br>
 <br>
PG0 is set in numeric display.<br>
(1) Writes the link parameter extension setting (H01) to SP127 by communication
<table>
<tr><td>ENQ</td><td>Station<br>H5</td><td>Instruction codes<br>HFF</td><td>Data<br>H01</td><td>Sum<br>check</td><td>CR</td></tr>
</table>
(2) Writes the second parameter changeover (H02) to SP108 (changeover to the rotation direction), then transfers it.
<table>
<tr><td>ENQ</td><td>Station<br>H5</td><td>Instruction codes<br>H6C</td><td>Data<br>H02</td><td>Sum<br>check</td><td>CR</td></tr>
</table>
(3) Pr201 is read.
<table>
<tr><td>ENQ</td><td>Station<br>H5</td><td>Instruction codes<br>H3D</td><td>Data<br>H01</td><td>Sum<br>check</td><td>CR</td></tr>
</table>
The link parameter extension setting and the second parameter changeover are instruction codes in communication.<br>
5. Related parameters<br>
Set the following parameters to desired values.<br>
Pr. 200: Time unit in program (Select "minute and second" or "hour and minute.)<br>
Pr. 231: Time setting (Set the time used as the reference of program operation.)
</td></tr>
</table>

<table>
<tr><th>Device name in GOT-F900</th><th>Function of inverter</th></tr>
<tr><td>Special parameter (SP)</td><td>This communication function of the inverter can be executed using the instruction code number When an instruction code is written to the special parameter (SP) device in the GOT-F900, communication with the inverter is executed.
<table>
<tr><th rowspan="2">Device in GOT</th><th colspan="2">Instruction code</th><th rowspan="2">Description</th><th rowspan="2">Corresponding device in GOT</th></tr>
<tr><th>Read</th><th>Write</th></tr>
<tr><td>SP108</td><td>6C</td><td>EC</td><td>Second parameter changeover switch-over</td><td>PG,Pr</td></tr>
<tr><td>SP109</td><td>6D</td><td>ED</td><td>Running frequency (RAM)</td><td></td></tr>
<tr><td>SP110</td><td>6E</td><td>EE</td><td>Running frequency (E$^2$PROM)</td><td></td></tr>
<tr><td>SP111</td><td>6F</td><td>–</td><td>Frequency monitor</td><td></td></tr>
<tr><td>SP112</td><td>70</td><td>–</td><td>Output current monitor</td><td></td></tr>
<tr><td>SP113</td><td>71</td><td>–</td><td>Output voltage monitor</td><td></td></tr>
<tr><td>SP114</td><td>72</td><td>–</td><td>Special monitor</td><td></td></tr>
<tr><td>SP115</td><td>73</td><td>F3</td><td>Special monitor selection No.</td><td></td></tr>
<tr><td>SP116</td><td>74</td><td>F4</td><td>Most recent No.1, No.2/alarm display clear</td><td>A</td></tr>
<tr><td>SP117</td><td>75</td><td>–</td><td>Most recent No.3, No.4/alarm display clear</td><td>A</td></tr>
<tr><td>SP118</td><td>76</td><td>–</td><td>Most recent No.5, No.6/alarm display clear</td><td>A</td></tr>
<tr><td>SP119</td><td>77</td><td>–</td><td>Most recent No.7, No.8/alarm display clear</td><td>A</td></tr>
<tr><td>SP122</td><td>7A</td><td>FA</td><td>Inverter status monitor/run command</td><td>S</td></tr>
<tr><td>SP123</td><td>7B</td><td>FB</td><td>Operation mode acquisition</td><td></td></tr>
<tr><td>SP124</td><td>–</td><td>FC</td><td>All clear</td><td></td></tr>
<tr><td>SP125</td><td>–</td><td>FD</td><td>Inverter reset</td><td></td></tr>
<tr><td>SP127</td><td>7F</td><td>FF</td><td>Link parameter extension setting</td><td>S,A,PG,PR</td></tr>
</table>
SP124 and SP125 can execute write only. SP111 to SP114 can execute monitoring only.<br><br>Caution<br>In the case of E500/S500 Series:<br>When SP127 is 1 and Pr37 is not 0, SP109 to SP111 cannot execute monitoring (write/read).</td></tr>
</table>

## 13.6 FREQROL Inverter Parameter List

This section describes, for reference, the list of comparison of parameters in the FREQROL Series inverters S500, E500 and A500.
For the details of each function, refer to the manual of the inverter respectively.

### 13.6.1 Parameters

The inverter is equipped with the following parameters.
(For the details, make sure to refer to the manual of the inverter.)

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Basic functions | 0 | Torque boost | 0 | Torque boost | 0 | Torque boost |
| | 1 | Maximum frequency | 1 | Maximum frequency | 1 | Maximum frequency |
| | 2 | Minimum frequency | 2 | Minimum frequency | 2 | Minimum frequency |
| | 3 | Base frequency | 3 | Base frequency | 3 | Base frequency |
| | 4 | Multi-speed setting (high speed) | 4 | Multi-speed setting (high speed) | 4 | Multi-speed setting (high speed) |
| | 5 | Multi-speed setting (middle speed) | 5 | Multi-speed setting (middle speed) | 5 | Multi-speed setting (middle speed) |
| | 6 | Multi-speed setting (low speed) | 6 | Multi-speed setting (low speed) | 6 | Multi-speed setting (low speed) |
| | 7 | Acceleration time | 7 | Acceleration time | 7 | Acceleration time |
| | 8 | Deceleration time | 8 | Deceleration time | 8 | Deceleration time |
| | 9 | Electronic thermal O/L relay | 9 | Electronic thermal O/L relay | 9 | Electronic thermal O/L relay |
| Standard operation functions | 10 | DC injection brake operation frequency | 10 | DC injection brake operation frequency | 10 | DC injection brake operation frequency |
| | 11 | DC injection brake operation time | 11 | DC injection brake operation time | 11 | DC injection brake operation time |
| | 12 | DC injection brake voltage | 12 | DC injection brake voltage | 12 | DC injection brake voltage |
| | 13 | Starting frequency | 13 | Starting frequency | 13 | Starting frequency |
| | 14 | Load pattern selection | 14 | Load pattern selection | 14 | Load pattern selection |
| | 15 | Jog frequency | 15 | Jog frequency | 15 | Jog frequency |
| | 16 | Jog acceleration/deceleration time | 16 | Jog acceleration/deceleration time | 16 | Jog acceleration/deceleration time |
| | 17 | MRS input selection | – | – | 17 | RUN key rotation direction selection |
| | 18 | High-speed maximum frequency | 18 | High-speed maximum frequency | – | – |
| | 19 | Base frequency voltage | 19 | Base frequency voltage | 19 | Base frequency voltage |
| | 20 | Acceleration/deceleration reference frequency | 20 | Acceleration/deceleration reference frequency | 20 | Acceleration/deceleration reference frequency |
| | 21 | Acceleration/deceleration time increments | 21 | Acceleration/deceleration time increments | 21 | Acceleration/deceleration time increments |
| | 22 | Stall prevention operation level | 22 | Stall prevention operation level | 22 | Stall prevention operation level |
| | 23 | Stall prevention operation level compensation factor at double speed | 23 | Stall prevention operation level compensation factor at double speed | 23 | Stall prevention operation level compensation factor at double speed |
| | 24 | Multi-speed setting (speed 4) | 24 | Multi-speed setting (speed 4) | 24 | Multi-speed setting (speed 4) |
| | 25 | Multi-speed setting (speed 5) | 25 | Multi-speed setting (speed 5) | 25 | Multi-speed setting (speed 5) |
| | 26 | Multi-speed setting (speed 6) | 26 | Multi-speed setting (speed 6) | 26 | Multi-speed setting (speed 6) |
| | 27 | Multi-speed setting (speed 7) | 27 | Multi-speed setting (speed 7) | 27 | Multi-speed setting (speed 7) |
| | 28 | Multi-speed input compensation | – | – | 28 | Stall prevention operation reduction starting frequency |
| | 29 | Acceleration/deceleration pattern | 29 | Acceleration/deceleration pattern | 29 | Acceleration/deceleration pattern |
| | 30 | Regenerative function selection | 30 | Regenerative function selection | 30 | Regenerative function selection |
| | 31 | Frequency jump 1A | 31 | Frequency jump 1A | 31 | Frequency jump 1A |
| | 32 | Frequency jump 1B | 32 | Frequency jump 1B | 32 | Frequency jump 1B |
| | 33 | Frequency jump 2A | 33 | Frequency jump 2A | 33 | Frequency jump 2A |
| | 34 | Frequency jump 2B | 34 | Frequency jump 2B | 34 | Frequency jump 2B |
| | 35 | Frequency jump 3A | 35 | Frequency jump 3A | 35 | Frequency jump 3A |
| | 36 | Frequency jump 3B | 36 | Frequency jump 3B | 36 | Frequency jump 3B |
| | 37 | Speed display | 37 | Speed display | 37 | Speed display |
| | – | – | 38 | Frequency at 5V (10V) input | 38 | Frequency setting voltage gain frequency |
| | – | – | 39 | Frequency at 20mA input | 39 | Frequency setting current gain frequency |
| | – | – | – | – | 40 | Start-time ground fault detection selection |
| Output terminal functions | 41 | Up-to-frequency sensitivity | 41 | Up-to-frequency sensitivity | 41 | Up-to-frequency sensitivity |
| | 42 | Output frequency detection | 42 | Output frequency detection | 42 | Output frequency detection |
| | 43 | Output frequency detection for reverse rotation | 43 | Output frequency detection for reverse rotation | 43 | Output frequency detection for reverse rotation |

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Second functions | 44 | Second acceleration/deceleration time | 44 | Second acceleration/deceleration time | 44 | Second acceleration/deceleration time |
| | 45 | Second deceleration time | 45 | Second deceleration time | 45 | Second deceleration time |
| | 46 | Second torque boost | 46 | Second torque boost | 46 | Second torque boost |
| | 47 | Second V/F (base frequency) | 47 | Second V/F (base frequency) | 47 | Second V/F(base frequency) |
| | 48 | Second stall prevention operation current | 48 | Second stall prevention operation current | – | – |
| | 49 | Second stall prevention operation frequency | – | – | – | – |
| | 50 | Second output frequency detection | – | – | – | – |
| Display functions | 52 | DU/PU main display data selection | 52 | Control panel/PU main display data selection 34 B4 0 | 52 | Control panel display data selection |
| | 53 | PU level display data selection | – | – | 53 | Frequency setting operation selection |
| | 54 | FM terminal function selection | 54 | FM terminal function selection | 54 | FM terminal function selection |
| | 55 | Frequency monitoring reference | 55 | Frequency monitoring reference | 55 | Frequency monitoring reference |
| | 56 | Current monitoring reference | 56 | Current monitoring reference | 56 | Current monitoring reference |
| Rated output current | 57 | Restart coasting time | 57 | Restart coasting time | 57 | Restart coasting time |
| | 58 | Restart cushion time | 58 | Restart cushion time | 58 | Restart cushion time |
| Additional function | 59 | Remote setting function selection | 59 | Remote setting function selection | 59 | Remote setting function selection |
| Operation selection functions | 60 | Intelligent mode selection | 60 | Shortest acceleration/deceleration mode 3C BC 0 | – | – |
| | 61 | Reference I for intelligent mode | 61 | Reference I for intelligent mode | – | – |
| | 62 | Ref. I for intelligent mode accel | 62 | Ref. I for intelligent mode accel | – | – |
| | 63 | Ref. I for intelligent mode decel | 63 | Ref. I for intelligent mode decel | – | – |
| | 64 | Starting frequency for elevator mode | 64 | Starting frequency for elevator mode | – | – |
| | 65 | Retry selection | 65 | Retry selection | – | – |
| | 66 | Stall prevention operation level reduction starting frequency | 66 | Stall prevention operation level reduction starting frequency | 66 | Retry selection |
| | 67 | Number of retries at alarm occurrence | 67 | Number of retries at alarm occurrence | 67 | Number of retries at alarm occurrence |
| | 68 | Retry waiting time | 68 | Retry waiting time | 68 | Retry waiting time |
| | 69 | Retry count display erasure | 69 | Retry count display erasure | 69 | Retry count display erasure |
| | 70 | Special regenerative brake duty | 70 | Special regenerative brake duty | – | – |
| | 71 | Applied motor | 71 | Applied motor | 71 | Applied motor |
| | 72 | PWM frequency selection | 72 | PWM frequency selection | 72 | PWM frequency selection |
| | 73 | 0-5V/0-10V selection | 73 | 0-5V/0-10V selection | 73 | 0-5V/0-10V selection |
| | 74 | Filter time constant | 74 | Filter time constant | 74 | Input filter time constant |
| | 75 | Reset selection/disconnected PU detection/PU stop selection | 75 | Reset selection/disconnected PU detection/PU stop selection | 75 | Reset selection/PU stop selection |
| | 76 | Alarm code output selection | 76 | Alarm code output selection | 76 | Cooling fan operation selection |
| | 77 | Parameter write disable selection | 77 | Parameter write disable selection | 77 | Parameter write disable selection |
| | 78 | Reverse rotation prevention selection | 78 | Reverse rotation prevention selection | 78 | Reverse rotation prevention selection |
| | 79 | Operation mode selection | 79 | Operation mode selection | 79 | Operation mode selection |
| Advanced magnetic flux vectorcontrol | 80 | Motor capacity | 80 | Motor capacity | – | – |
| | 81 | Number of motor poles | 81 | Number of motor poles | – | – |
| | 82 | Motor exciting current | 82 | Motor exciting current | – | – |
| | 83 | Rated motor voltage | 83 | Rated motor voltage | – | – |
| | 84 | Rated motor frequency | 84 | Rated motor frequency | – | – |
| | 89 | Speed control gain | – | – | – | – |
| | 90 | Motor constant (R1) | 90 | Motor constant (R1) | – | – |
| | 91 | Motor constant (R2) | – | – | – | – |
| | 92 | Motor constant (L1) | – | – | – | – |
| | 93 | Motor constant (L2) | – | – | – | – |
| | 94 | Motor constant (X) | – | – | – | – |
| | 95 | Online auto tuning selection | – | – | – | – |
| | 96 | Auto-tuning setting/status | 96 | Auto-tuning setting/status | – | – |
| | – | – | – | – | – | – |

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| 5-point flexible V/F characteristics | 100 | V/F1 (first frequency) | – | – | – | – |
| | 101 | V/F1 (first frequency voltage) | – | – | – | – |
| | 102 | V/F2 (second frequency) | – | – | – | – |
| | 103 | V/F2 (second frequency voltage) | – | – | – | – |
| | 104 | V/F3 (third frequency) | – | – | – | – |
| | 105 | V/F3 (third frequency voltage) | – | – | – | – |
| | 106 | V/F4 (fourth frequency) | – | – | – | – |
| | 107 | V/F4 (fourth frequency voltage) | – | – | – | – |
| | 108 | V/F5 (fifth frequency) | – | – | – | – |
| | 109 | V/F5 (fifth frequency voltage) | – | – | – | – |
| Third functions | 110 | Third acceleration/deceleration time | – | – | – | – |
| | 111 | Third deceleration time | – | – | – | – |
| | 112 | Third torque boost | – | – | – | – |
| | 113 | Third V/F (base frequency) | – | – | – | – |
| | 114 | Third stall prevention operation current | – | – | – | – |
| | 115 | Third stall prevention operation frequency | – | – | – | – |
| | 116 | Third output frequency detection | – | – | – | – |
| Communication functions | 117 | Station number | 117 | Station number | – | – |
| | 118 | Communication speed | 118 | Communication speed | – | – |
| | 119 | Stop bit length | 119 | Stop bit length | – | – |
| | 120 | Parity check presence/absence | 120 | Parity check presence/absence | – | – |
| | 121 | Number of communication retries | 121 | Number of communication retries | – | – |
| | 122 | Communication check time interval | 122 | Communication check time interval | – | – |
| | 123 | Waiting time setting | 123 | Waiting time setting | – | – |
| | 124 | CR, LF presence/absence selection | 124 | CR, LF presence/absence selection | – | – |
| PID control | 128 | PID action selection | 128 | PID action selection | 88 | PID action selection |
| | 129 | PID proportional band | 129 | PID proportional band | 89 | PID proportional band |
| | 130 | PID integral time | 130 | PID integral time | 90 | PID integral time |
| | 131 | Upper limit | 131 | Upper limit | 91 | Upper limit |
| | 132 | Lower limit | 132 | Lower limit | 92 | Lower limit |
| | 133 | PID action set point for PU operation | 133 | PID action set point for PU operation | 93 | PID action set point for PU operation |
| | 134 | PID differential time | 134 | PID differential time | 94 | PID differential time |
| Commercial power supply- inverter switch- over | 135 | Commercial power supply-inverter switch-over sequence output terminal selection | – | – | – | – |
| | 136 | MC switch-over interlock time | – | – | – | – |
| | 137 | Start waiting time | – | – | – | – |
| | 138 | Commercial power supply-inverter switch-over selection at alarm occurrence | – | – | – | – |
| | 139 | Automatic inverter-commercial power supply switch-over frequency | – | – | – | – |
| Backlash | 140 | Backlash acceleration stopping frequency | – | – | – | – |
| | 141 | Backlash acceleration stopping time | – | – | – | – |
| | 142 | Backlash deceleration stopping frequency | – | – | – | – |
| | 143 | Backlash deceleration stopping time | – | – | – | – |
| Display | 144 | Speed setting switch-over | – | – | – | – |
| | 145 | Parameter unit language switch-over | 145 | Parameter unit language switch-over | – | – |
| Addit- ional functions | 148 | Stall prevention operation level at 0V input | 146 | Frequency setting command selection | – | – |
| | 149 | Stall prevention operation level at 10V input | – | – | – | – |
| Current detection | 150 | Output current detection level | 150 | Output current detection level | 48 | Output current detection level |
| | 151 | Output current detection period | 151 | Output current detection period | 49 | Output current detection period |
| | 152 | Zero current detection time | 152 | Zero current detection time | 50 | Zero current detection time |
| | 153 | Zero current detection period | 153 | Zero current detection period | 51 | Zero current detection period |

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Sub functions | 154 | Voltage reduction selection during stall prevention operation | – | – | – | – |
| | 155 | RT signal activated condition | – | – | – | – |
| | 156 | Stall prevention operation selection | 156 | Stall prevention operation selection | – | – |
| | 157 | OL signal waiting time | – | – | – | – |
| | 158 | AM terminal function selection | – | – | – | – |
| Additional function | 160 | User group read selection | 160 | User group read selection | – | – |
| Restart after instantaneous power failure | 162 | Automatic restart after instantaneous power failure selection | – | – | – | – |
| | 163 | First cushion time for restart | – | – | – | – |
| | 164 | First cushion voltage for restart | – | – | – | – |
| | 165 | Restart stall prevention operation level | – | – | – | – |
| Initial monitor | 170 | Watt-hour meter clear | – | – | – | – |
| | 171 | Actual operation hour meter clear | 171 | Actual operation hour meter clear | – | – |
| User functions | 173 | User group 1 registration | 173 | User group 1 registration | – | – |
| | 174 | User group 1 deletion | 174 | User group 1 deletion | – | – |
| | 175 | User group 2 registration | 175 | User group 2 registration | – | – |
| | 176 | User group 2 deletion | 176 | User group 2 deletion | – | – |
| Terminal assignment functions | 180 | RL terminal function selection | 180 | RL terminal function selection | 60 | RL terminal function selection |
| | 181 | RM terminal function selection | 181 | RM terminal function selection | 61 | RM terminal function selection |
| | 182 | RH terminal function selection | 182 | RH terminal function selection | 62 | RH terminal function selection |
| | 183 | RT terminal function selection | 183 | MRS terminal function selection | 63 | SRT terminal function selection |
| | 184 | AU terminal function selection | – | – | – | – |
| | 185 | JOG terminal function selection | – | – | – | – |
| | 186 | CS terminal function selection | – | – | – | – |
| | 190 | RUN terminal function selection | 190 | RUN terminal function selection | 64 | RUN terminal function selection |
| | 191 | SU terminal function selection | 191 | SU terminal function selection | – | – |
| | 192 | IPF terminal function selection | 192 | A, B, C terminal function selection | – | – |
| | 193 | OL terminal function selection | – | – | – | – |
| | 194 | FU terminal function selection | – | – | – | – |
| | 195 | A, B, C terminal function selection | – | – | 65 | A, B, C terminal function selection |
| Additional function | 199 | User's initial value setting | – | – | – | – |

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Programmed operation | 200 | Programmed operation minute/second selection | – | – | – | – |
| | 201 | Program setting 1 | – | – | – | – |
| | 202 | Program setting 1 | – | – | – | – |
| | 203 | Program setting 1 | – | – | – | – |
| | 204 | Program setting 1 | – | – | – | – |
| | 205 | Program setting 1 | – | – | – | – |
| | 206 | Program setting 1 | – | – | – | – |
| | 207 | Program setting 1 | – | – | – | – |
| | 208 | Program setting 1 | – | – | – | – |
| | 209 | Program setting 1 | – | – | – | – |
| | 210 | Program setting 1 | – | – | – | – |
| | 211 | Program setting 2 | – | – | – | – |
| | 212 | Program setting 2 | – | – | – | – |
| | 213 | Program setting 2 | – | – | – | – |
| | 214 | Program setting 2 | – | – | – | – |
| | 215 | Program setting 2 | – | – | – | – |
| | 216 | Program setting 2 | – | – | – | – |
| | 217 | Program setting 2 | – | – | – | – |
| | 218 | Program setting 2 | – | – | – | – |
| | 219 | Program setting 2 | – | – | – | – |
| | 220 | Program setting 2 | – | – | – | – |
| | 221 | Program setting 3 | – | – | – | – |
| | 222 | Program setting 3 | – | – | – | – |
| | 223 | Program setting 3 | – | – | – | – |
| | 224 | Program setting 3 | – | – | – | – |
| | 225 | Program setting 3 | – | – | – | – |
| | 226 | Program setting 3 | – | – | – | – |
| | 227 | Program setting 3 | – | – | – | – |
| | 228 | Program setting 3 | – | – | – | – |
| | 229 | Program setting 3 | – | – | – | – |
| | 230 | Program setting 3 | – | – | – | – |
| | 231 | Timer setting | – | – | – | – |
| Multi- speed operation | 232 | Multi-speed setting (speed 8) | 232 | Multi-speed setting (speed 8) | 80 | Multi-speed setting (speed 8) |
| | 233 | Multi-speed setting (speed 9) | 233 | Multi-speed setting (speed 9) | 81 | Multi-speed setting (speed 9) |
| | 234 | Multi-speed setting (speed 10) | 234 | Multi-speed setting (speed 10) | 82 | Multi-speed setting (speed 10) |
| | 235 | Multi-speed setting (speed 11) | 235 | Multi-speed setting (speed 11) | 83 | Multi-speed setting (speed 11) |
| | 236 | Multi-speed setting (speed 12) | 236 | Multi-speed setting (speed 12) | 84 | Multi-speed setting (speed 12) |
| | 237 | Multi-speed setting (speed 13) | 237 | Multi-speed setting (speed 13) | 85 | Multi-speed setting (speed 13) |
| | 238 | Multi-speed setting (speed 14) | 238 | Multi-speed setting (speed 14) | 86 | Multi-speed setting (speed 14) |
| | 239 | Multi-speed setting (speed 15) | 239 | Multi-speed setting (speed 15) | 87 | Multi-speed setting (speed 15) |
| Sub functions | 240 | Soft-PWM setting | 240 | Soft-PWM setting | 70 | Soft-PWM setting |
| | 244 | Cooling fan operation selection | 244 | Cooling fan operation selection | – | – |
| | – | – | 245 | Rated motor slip | 95 | Rated motor slip |
| | – | – | 246 | Slip compensation time constant | 96 | Slip compensation time constant |
| | – | – | 247 | Constant-output region slip compensation selection | 97 | Constant-output region slip compensation selection |
| | – | – | – | – | 98 | Automatic torque boost selection (Motor capacity) |
| | – | – | 249 | Motor primary resistance | 99 | Motor primary resistance |
| Stop selection function | 250 | Stop selection | 250 | Stop selection | – | – |
| Additional function | 251 | Output phase failure protection selection | 251 | Output phase failure protection selection | – | – |
| | 252 | Override bias | – | – | – | – |
| | 253 | Override gain | – | – | – | – |

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Power failure stop functions | 261 | Power failure stop selection | – | – | – | – |
| | 262 | Subtracted frequency at deceleration start | – | – | – | – |
| | 263 | Subtraction starting frequency | – | – | – | – |
| | 264 | Power-failure deceleration time 1 | – | – | – | – |
| | 265 | Power-failure deceleration time 2 | – | – | – | – |
| | 266 | Power-failure deceleration time switch-over frequency | – | – | – | – |
| Function selection | 270 | Stop-on-contact/load torque high-speed frequency control selection | – | – | – | – |
| High speed frequency control | 271 | High-speed setting maximum current | – | – | – | – |
| | 272 | Mid-speed setting minimum current | – | – | – | – |
| | 273 | Current averaging range | – | – | – | – |
| | 274 | Current averaging filter constant | – | – | – | – |
| Stop on contact | 275 | Stop-on-contact exciting current low-speed multiplying factor | – | – | – | – |
| | 276 | Stop-on-contact PWM carrier frequency | – | – | – | – |
| Brake sequence functions | 278 | Brake opening frequency | – | – | – | – |
| | 279 | Brake opening current | – | – | – | – |
| | 280 | Brake opening current detection time | – | – | – | – |
| | 281 | Brake operation time at start | – | – | – | – |
| | 282 | Brake operation frequency | – | – | – | – |
| | 283 | Brake operation time at stop | – | – | – | – |
| | 284 | Deceleration detection function selection | – | – | – | – |
| | 285 | Overspeed detection frequency | – | – | – | – |
| Droop control | 286 | Droop gain | – | – | – | – |
| | 287 | Droop filter constant | – | – | – | – |
| Additional function | 342 | $E^2$ PROM write selection | 342 | $E^2$ PROM write selection | n12<br>342 | $E^2$ PROM write selection |
| Calibration functions | 900 | FM (AM) terminal calibration | 900 | FM (AM) terminal calibration | C1<br>900 | FM (AM) terminal calibration |
| | 901 | AM terminal calibration | – | – | – | – |
| | 902 | Frequency setting voltage bias | 902 | Frequency setting voltage bias | C2<br>902 | Frequency setting voltage bias frequency |
| | | | | | C3<br>902 | Frequency setting voltage bias |
| | 903 | Frequency setting voltage gain | 903 | Frequency setting voltage gain | C4<br>903 | Frequency setting voltage gain |
| | 904 | Frequency setting current bias | 904 | Frequency setting current bias | C6<br>904 | Frequency setting current bias frequency |
| | 905 | Frequency setting current gain | 905 | Frequency setting current gain | C7<br>905 | Frequency setting current bias |
| | – | Built-in frequency setting | – | – | – | Parameter set by manufacturer.<br>Do not set. |
| | – | – | 922 | Built-in frequency setting potentiometer bias | – | – |
| | – | – | 923 | Built-in frequency setting potentiometer gain | – | – |
| Additional function | 990 | Buzzer control | 990 | Buzzer control | n14<br>990 | PU buzzer sound control |
| | 991 | LCD contrast | 991 | LCD contrast | n15<br>991 | PU contrast adjustment |
| Clear parameters | – | – | – | – | CLr | Parameter clear |
| | – | – | – | – | ECL | Alarm history clear |

In the column for S500, the numbers starting with 'c' or 'n' are the parameters displayed on the in-built operation panel, and the numbers below are the parameters for FR-PU04.

Note:

1. Indicates the parameter settings which are ignored when the advanced magnetic flux vector control mode is selected.
2. Can be set when Pr. 80, Pr. 81 ≠ 9999, Pr. 60 = 7 or 8.
3. Can be accessed when Pr. 80, Pr. 81 ≠ 9999, Pr. 77 = 801.
4. Can be accessed when Pr. 29 = 3.

### 13.6.2 Communication Parameters

The parameters shown in the table below correspond to the following communication ports respectively.

- In the A500 Series, the following parameters are communication parameters for the FR-A5NR computer link option.
- In the E500 Series, only the PU port is available.
- In the S500 Series, the following parameters are available if the RS-485 communication function is provided.

If an inverter is connected to the PU port other than above, set the parameters using Pr. 117 to Pr. 124 shown in the previous page.)

| Function | A500 | | E500 | | S500 | |
|---|---|---|---|---|---|---|
| | Pr | Name | Pr | Name | Pr | Name |
| Computer link function | 331 | Inverter station number | | | n1 331 | Inverter station number |
| | 332 | Communication speed | | | n2 332 | Communication speed |
| | 333 | Stop bit length | | | n3 333 | Stop bit length |
| | 334 | Parity check yes/no | | | n4 334 | Parity check yes/no |
| | 335 | Communication retry count | | | n5 335 | Communication retry count |
| | 336 | Communication check time interval | | | n6 336 | Communication check time interval |
| | 337 | Waiting time setting | | | n7 337 | Waiting time setting |
| | 338 | Operation command right | | | n8 338 | Operation command right |
| | 339 | Speed command right | | | n9 339 | Speed command right |
| | 340 | Link start mode selection | | | n10 340 | Link start mode selection |
| | 341 | CR•E LF yes/no selection | | | n11 341 | CR•E LF yes/no selection |
| | 342 | $E^2$PROM write selection | | | n12 342 | $E^2$PROM write selection |
| | – | – | | | n13 145 | PU display language |
| | – | – | | | n14 990 | PU buzzer sound control |
| | – | – | | | n15 991 | PU contrast adjustment |
| | – | – | | | n16 992 | PU main display screen data selection |
| | – | – | | | n17 993 | PU disconnection detection/PU setting lock |

## 13.7 Setting of Connected Equipment for GOT

The FREQROL Series inverter connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

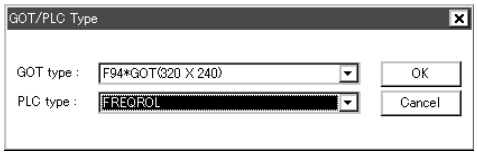
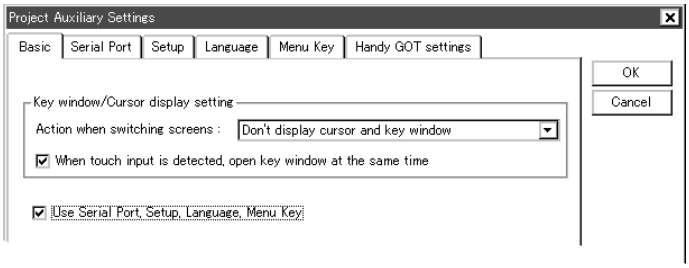
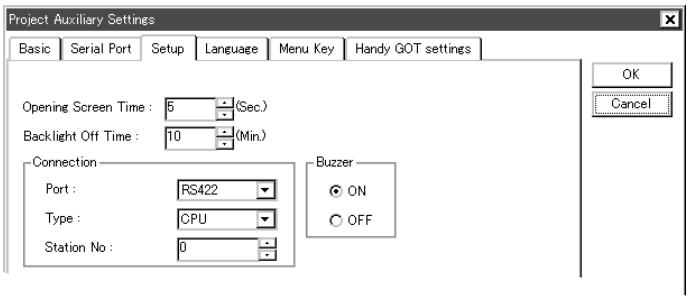
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:FREQROL<br>CONNECTION:CPU PORT (RS-422)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: FREQROL<br>CONNECTION:CPU PORT (RS-422)<br>DST STATION # (STATION #): 00<br>GOT STATION # (–) : – | |

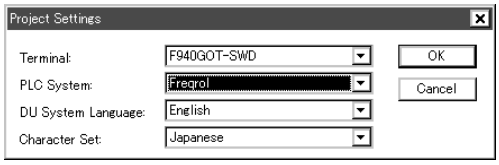
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

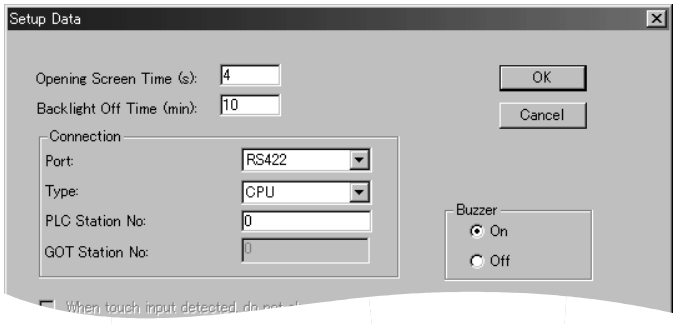
### 2) GT Designer

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) Open GT Designer. | The "Select Project" dialog box appears. |
| | b) Click the [New] button.   | The "GOT/PLC Type" dialog box appears. |
| | c) Set the following.<br>GOT type: F940WGOT (480 × 234)<br>F940GOT (320 × 240)<br>F930GOT (240 × 80)<br>PLC type: FREQROL<br>Selection of "GOT type"<br>Click [OK]. | |
| | d) Set CPU direct connection (RS-422) of the GOT-F900.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.   | The "Project Auxiliary Settings" dialog box appears. |
| | Click the "Setup" tab.   | |
| | e) Set the following.<br>Port : RS-422<br>Type : CPU<br>DST Station No. (Station No.) : 00<br>GOT Station No. (–) : – | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

| GOT type | Model name |
|---|---|
| F940WGOT(480×234)<WIDE> | F940WGOT |
| F94*GOT(320×240) | F940GOT<br>Handy GOT |
| F93*GOT(240×80) | F930GOT-K<br>F930GOT |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br>b) On the menu, select "File"-"New".<br> 

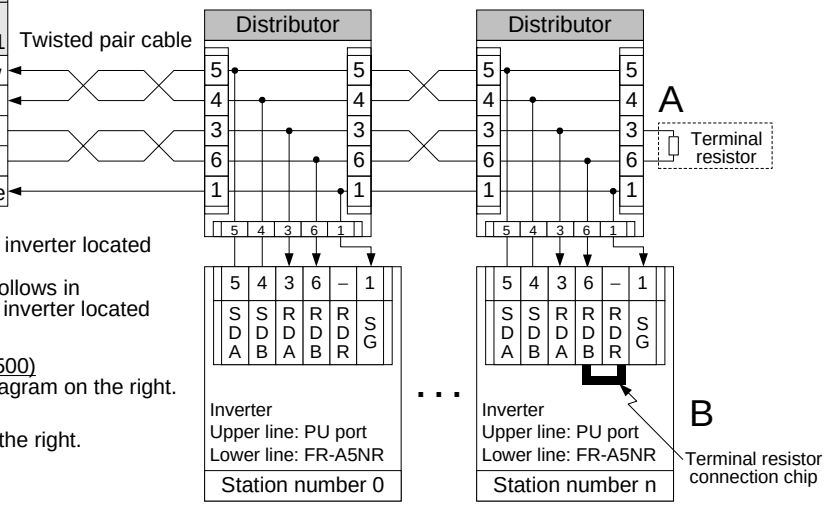
<br>c) Set the following.<br>Terminal: F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: FREQROL<br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table></td><td>The "Project settings" dialog box appears.</td></tr>
<tr><td>In the case of RS-422 connection</td><td>d) Set RS-422 of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

<br>e) Set the following.<br>Port: RS-422<br>Type: CPU<br>DST Station No. (Station No.): 00<br>GOT Station No. (–) : –</td><td>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For setting of RS-422 of the FREQROL Series inverter, refer to e) in [Creation] above.</td><td>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

## 13.8 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the FREQROL Series inverter.

| Signal name | GOT-F900 | Handy GOT | |
|---|---|---|---|
| | 9pin D-Sub | F9GT-HCAB | F9GT-HCAB1 |
| RDA | 2 | 6 | Yellow |
| RDB | 7 | 7 | Brown |
| SDA | 1 | 2 | Black |
| SDB | 6 | 3 | White |
| SG | 5 | 10 | Orange |




Connect a terminal resistor to the inverter located farthest from the GOT-F900.
Connect the terminal resistor as follows in accordance with the model of the inverter located farthest.

PU port (A500/E500), RS-485 (S500)
Connect as shown in (A) in the diagram on the right.

FR-A5NR
Connect to (B) in the diagram on the right.

In cables connecting distributors, do not wire the pin number 2 and 8. Inverters may fail by such wiring.

### 1) Cable for the GOT and the FREQROL Series inverter

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | INV CPU direct connection (RS-422 connection)<br>PU port of A500 Series, E500 Series or S500 Series | GOT-F900<br>9-pin D-Sub, male | (1)–(3)<br>(2)–(5)<br>(5)–(1)<br>(6)–(6)<br>(7)–(4) | PU port<br>PJ-45 plug, male |
| b) | INV CPU direct connection (RS-422 connection)<br>FR-A5NR of A500 Series | GOT-F900<br>9-pin D-Sub, male | (1)–RDA<br>(2)–SDA<br>(5)–SG<br>(6)–RDB<br>(7)–SDB | Terminal block of FR-A5NR |
| c) | INV direct connection (RS-422 connection)<br>Between distributor and distributor | Distributor<br>PJ-45 plug, male | (1)–(1)<br>(2) Do not connect. (2)<br>(3)–(3)<br>(4)–(4)<br>(5)–(5)<br>(6)–(6)<br>(7)–(7)<br>(8) Do not connect. (8) | Distributor<br>PJ-45 plug, male |
| d) | INV direct connection (RS-422 connection)<br>Between distributor and FR-A5NR of A500 Series | Distributor<br>PJ-45 plug, male | (1)–SG<br>(2) Do not connect. (2)<br>(3)–RDA<br>(4)–SDB<br>(5)–SDA<br>(6)–RDB<br>(7) (7)<br>(8) Do not connect. (8) | Terminal block of FR-A5NR |

**2) Cable for the Handy GOT and the FREQROL Series inverter**

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB2-150 or F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Untied cable (no connector) |
| c) | Prepared by the user<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-□□M<br>Drain wire (1)<br>FG(class D grounding)<br>BK(2) (3)<br>Y (6) (5)<br>O (10) (1)<br>W (3) (6)<br>BR(7) (4)<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M | PU port<br>1 8<br>PJ-45 plug, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | Prepared by the user<br>The diagram on the right shows the wiring of the RS-422 signals. For wiring of the operation switches and the power supply, refer to chapter 5. | RS-422 connection | To cable F9GT-HCAB on Handy GOT side<br>13 1<br>25 14<br>25-pin D-Sub, female | F9GT-HCAB-□□M<br>Drain wire (1)<br>FG(class D grounding)<br>BK(2) RDA<br>Y (6) SDA<br>O (10) SG<br>W (3) RDB<br>BR(7) SDB<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M | Terminal block of FR-A5NR<br>Wire the power supply, the operation switches and the emergency stop switch. |
| e) | Prepared by the user<br>Between distributor and distributor | RS-422 connection | Distributor<br>1 8<br>PJ-45 plug, male | (1) (1)<br>(2) Do not connect. (2)<br>(3) (3)<br>(4) (4)<br>(5) (5)<br>(6) (6)<br>(7) (7)<br>(8) Do not connect. (8) | Distributor<br>1 8<br>PJ-45 plug, male |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| f) | RS-422 connection<br>INV direct connection<br>Between distributor and FR-A5NR of A500 Series | Distributor<br>1 8<br>PJ-45 plug, male | (1) ◄——► SG<br>(2) Do not connect. (2)<br>(3) ◄——► RDA<br>(4) ◄——► SDB<br>(5) ◄——► SDA<br>(6) ◄——► RDB<br>(7) (7)<br>(8) Do not connect. (8) | Terminal block of FR-A5NR |

### 3) Connectors and connector covers to be used

a) Connector on the GOT side

For the connectors used in the GOT-F900 and the Handy GOT, refer to the description on corresponding dedicated wiring.

b) Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Introduced products (as of June, 2000)

| Name | Model name | Specifications | Manufacturer |
|---|---|---|---|
| Connector | 5-554720-3 | RJ45 connector | Tyco Electronics AMP K.K. |
| Modular ceiling rossette | BMJ-8 | | HACHIKO ELECTRIC CO.,LTD.<br>Telephone number: 03-3806-9171 |
| Cable | SGLPEV 0.5mm×4P | Cable conforming to EIA568 (such as cable 10BASE-T) | MITSUBISHI CABLE INDUSTRIES, LTD. |

The company name is changed.
Conventional name: AMP Incorporated
New name: Tyco Electronics AMP K.K.

## 13.9 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FREQROL Series inverter.

**1) GOT-F900**

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the FREQROL inverter is turned off.<br><br>• Cause<br>Communication is disabled because the power of the FREQROL inverter is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the FREQROL.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen was tried by a touch key.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the FREQROL inverter was referenced. (Example: While an S500 Series is connected, a device exists only in the A500 Series is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected FREQROL inverter is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the FREQROL inverter was referenced. (Example: While an S500 Series is connected, a device exists only in the A500 Series is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected FREQROL inverter is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | A parameter (Pr) in the FREQROL inverter was tried to be changed.<br><br>• Cause<br>The FREQROL inverter is not set to the computer link operation mode or the inverter is running.<br>• Countermeasures<br>In the manual of the FREQROL inverter, confirm the allowable write range in each operation mode. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A bar code reader or printer is connected.<br>(Such equipment cannot be connected to the FREQROL inverter.)<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer" to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 14. Connection of Microcomputer

This chapter explains the procedure to connect the GOT-F900 Series display unit to controllers such as a microcomputer board having the serial communication function (RS-422/RS-232C) and a personal computer (hereafter referred to as "microcomputer").

### Connection Procedure

The procedure to connect the microcomputer is introduced.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 14.1 |
| System Configuration | You can select the configuration of between the GOT and the microcomputer and proper cables. | 14.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Outline of Communication and Specifications | You can learn the communication specifications and the contents of setting.<br>Outline of Communication: The outline of data transferred between the microcomputer and the GOT — 14.3.1<br>Communication Setting Specifications: The communication specification values available in the GOT — 14.3.2 | 14.3 |
| Memory Map | You can learn the detailed contents of the memory inside the GOT.<br>Data Area: Addresses specified from the microcomputer and assignment of the word data (D) and the bid data (M) inside the GOT — 14.4.1<br>Special Memory Data List: The assignment status of the memory inside the GOT used for special application — 14.4.2<br>Error Code List: Codes of errors related to communication which are stored in D8002 — 14.4.3 | 14.4 |
| Communication Command | You can learn the detailed contents of communication commands of the microcomputer.<br>Outline of Communication Procedure: The outline of data transmission — 14.5.1<br>Command List and Compatible Version of GOT-F900: The types of commands used in transmission and receive between the GOT — 14.5.2<br>Data Transfer Format: The chart of the data transfer format — 14.5.3<br>Character code list: The characters available in statements — 14.5.4<br>Station Number Setting: Procedure of station number setting — 14.5.5<br>Sum Check Code: The contents of the sum check code included in the data format — 14.5.6<br>Interrupt Code List: The correspondence between interrupt codes and event types — 14.5.7 | 14.5 |

| Item name | Description | | Reference |
|---|---|---|---|
| Command Details | You can learn the operation of each communication command. | | 14.6 |
| | Batch Read Command (RD) | The format used to read data from the GOT to the microcomputer | 14.6.1 |
| | Batch Write Command (WR) | The format used to write data from the microcomputer to the GOT | 14.6.2 |
| | Bit-oriented Write Command | The format used to write the bit device to the GOT according to a specified pattern | 14.6.3 |
| | Fill Command | The format used to write data to a specified range in the GOT | 14.6.4 |
| | Interrupt Code | The function of interrupt code | 14.6.5 |
| Setting of Connected Equipment for GOT | Set the PLC (microcomputer) type and the communication specifications using the GOT or the screen creation software. | | 14.7 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for Microcomputer/GOT connection | 14.8 |
| Troubleshooting | Description of errors and how to fix them | 14.9 |
| BASIC Program Example | BASIC programs for the personal computer connected to the GOT for communication. | 14.10 |

## 14.1 System Condition

When connecting the microcomputer, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting microcomputer

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | ✓ | ✓ | ✓*2 | 1.00 | SW1-H | 2.20 |
| F930GOT-K | ✓ | ✓ | ✓ | ✓*2 | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | ✓*2 | 1.00 | SW1-A | 2.00 |
| F940WGOT | ✓ | ✓ | ✓ | ✓*2 | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | –*1*2 | 1.00 | SW1-D | 2.10 |
| F943 Handy GOT | – | ✓ | ✓ | –*1*2 | 1.00 | SW1-D | 2.10 |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

*2 Connection of two or more GOT units is possible from the version shown in the table below.
For details about screen creation software version, setting method in GOT, and cable between GOTs, refer to Chapter 7.

| Type | F930GOT | F930GOT-K | F940GOT | F940WGOT | Handy GOT |
|---|---|---|---|---|---|
| Applicable version of GOT-F900 | 3.00 | 4.60 | 5.00 | 1.00 | 5.00 |

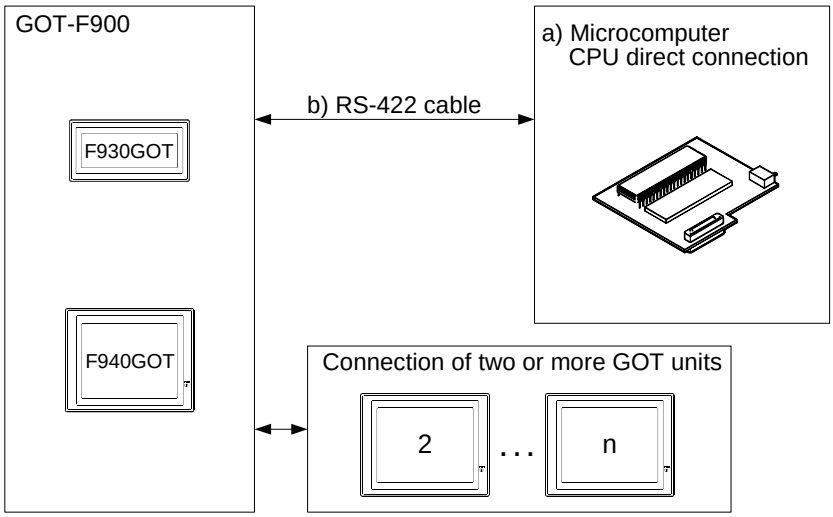
## 14.2 System Configuration

The microcomputer can be directly connected to the GOT via RS-422 or RS-232C. This section explains the cables required in such a system.

### 14.2.1 Configuration for CPU Direct Connection (RS-422)

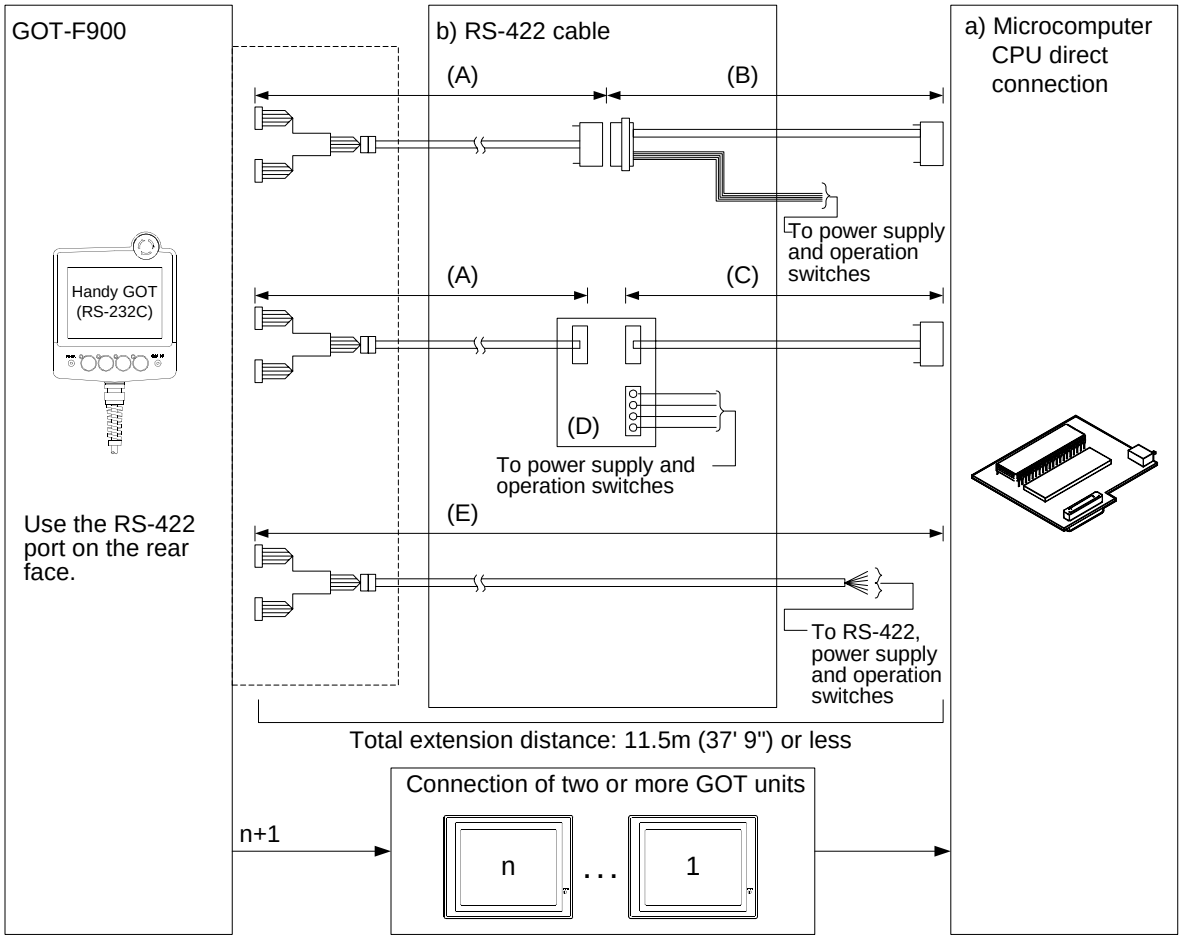
Connect the GOT-F900 to the RS-422 communication port of the microcomputer.

**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) Microcomputer | b) RS-422 cable | Remarks |
|---|---|---|
| CPU direct connection | Prepared by the user. | |

### 2) F940 Handy GOT

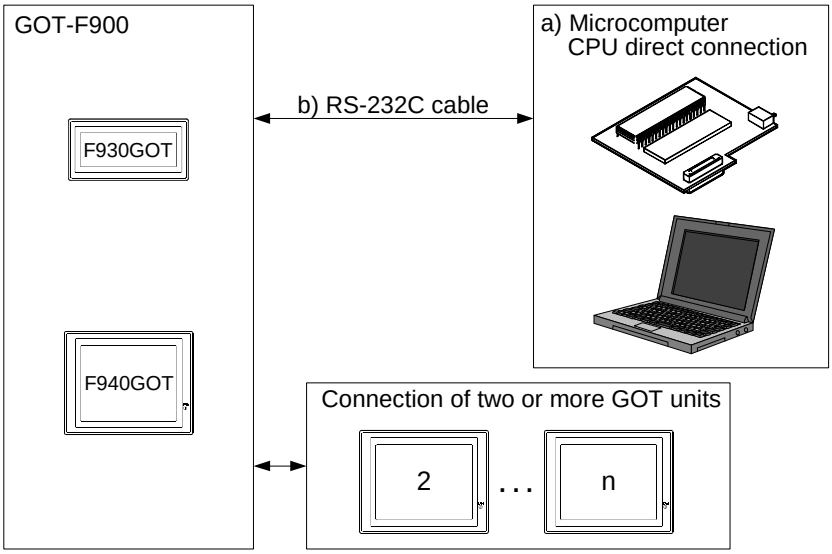



| a) Microcomputer | b) RS-422 cable | Remarks |
|---|---|---|
| CPU direct connection | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user.<br>(C) Prepared by the user.<br>(D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | |

### 14.2.2 Configuration for CPU Direct Connection (RS-232C)

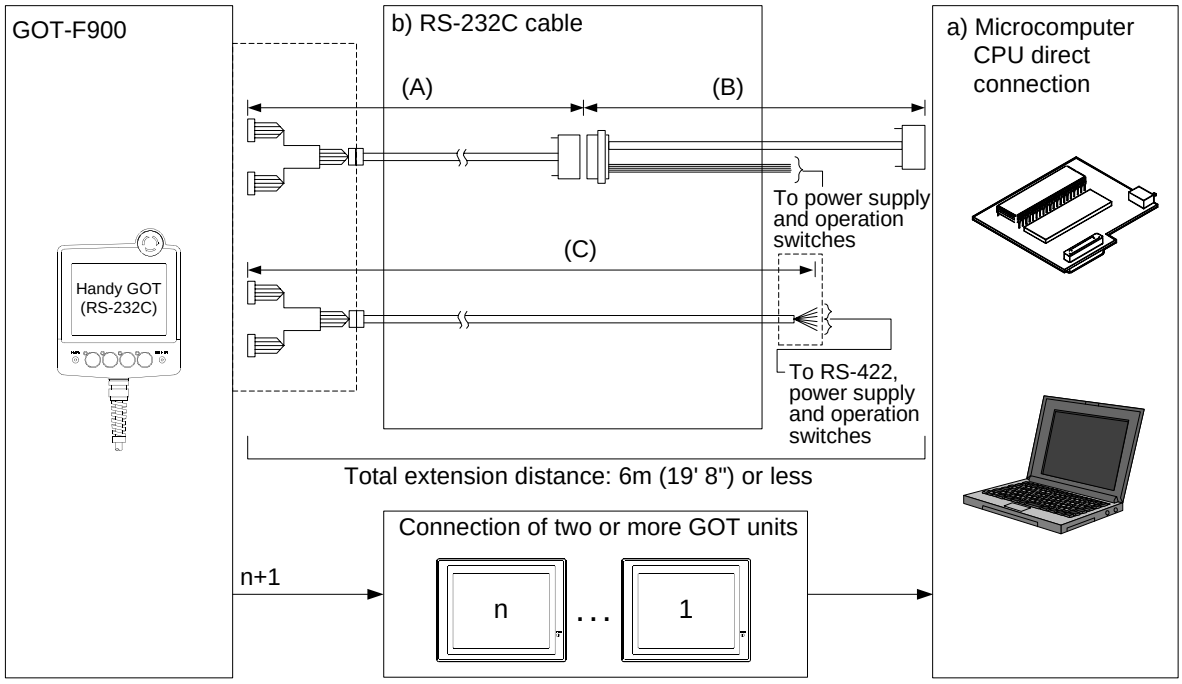
Connect the GOT-F900 to the RS-232C communication port of the microcomputer.

**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) Microcomputer | b) RS-232C cable | Remarks |
|---|---|---|
| CPU direct connection | Prepared by the user. | |

**2) F943 Handy GOT**




| a) Microcomputer | b) RS-232C cable | Remarks |
|---|---|---|
| CPU direct connection | (A) F9GT-HCAB-3M<br>(B) Prepared by the user.<br>(C) F9GT-HCAB1-3M | |

- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6 m or less.

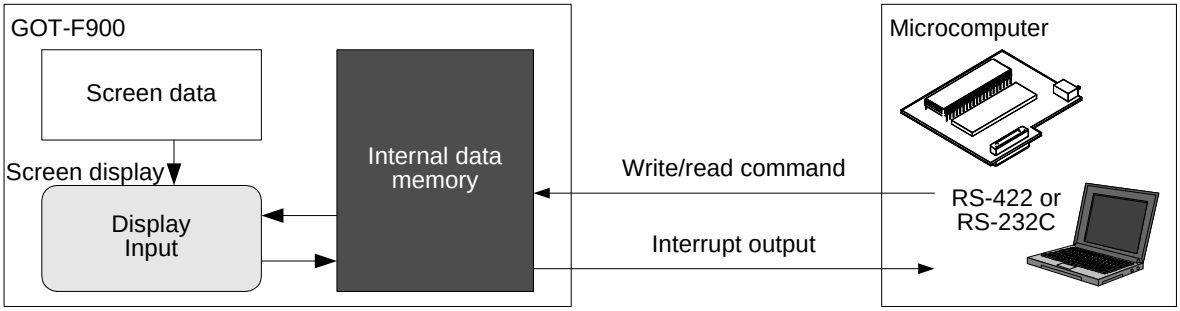
## 14.3 Outline of Communication and Specifications

When the GOT-F900 is connected to the microcomputer, the outline of data transfer and the communication specifications should be set as described below.

### 14.3.1 Outline of Communication

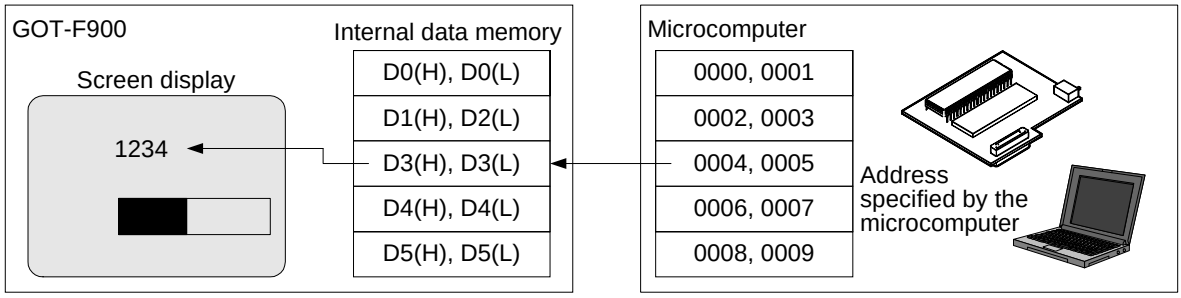
**1) Outline**

In microcomputer connection, the microcomputer functions as the master station, and the GOT-F900 functions as the slave station. The GOT-F900 is equipped with the built-in data area in which word data and bit data are stored. The microcomputer executes read and write to this internal data area using communication commands.




**2) Screen display and outline of control**

The display and the contents of control in the GOT-F900 are determined by the screen data created by the screen creation software installed in the personal computer. The screen data specifies the layout of objects displayed on the screen or actions to be executed when touch keys are pressed.
Some functions access the data such as the function to display word devices in the "numeric value" or "bar graph" format and the function to change the bit data status by "switches" access the data in the internal data area. The access target in such cases is the internal data area. The location of the data to be accessed is specified by the screen data.




**3) Write command and read command**

When the data stored in the microcomputer is to be displayed on the screen, the microcomputer should transfer it to the internal data area of the GOT-F900 using the write command. The transfer destination is specified by the screen data. The result of data change by the key operation can be transferred from the internal data area of the GOT to the microcomputer if the microcomputer gives the read command. As the trigger of change, the interrupt code can be transmitted.

### 14.3.2 Communication Setting Specifications

The table below shows the transmission specifications available in the GOT-F900.
Set the transmission specifications in accordance with those in the microcomputer.

| Item | | Setting range | Setting in microcomputer |
|---|---|---|---|
| Baud rate | | 19200 or 9600 or 4800 or 2400 or 1200 or 600 or 300 bps | |
| Data format | Data bit | 8 or 7 bits | |
| | Parity bit | None, even or odd | |
| | Stop bit | 1 or 2 bits | |
| | Flow control | DSR/DTR or XON/XOFF | Setting invalid |

- For the GOT-F900 transmission specifications setting method, refer to section 14.7.

## 14.4 Memory Map

The data stored in the GOT-F900 is classified into word data (D) and bit data (M).
An address is assigned to each data, and each data is positioned as described below.

### 14.4.1 Data Area

The microcomputer specifies data by "address". The screen creation software specifies data by "D" or "M".

**1) Word data (D)**

There are 4096 word devices (D0 to D4095). A serial number (address) is assigned to each of them.

a) Word data (16 bits)
Each 8-bit word data is lined in the order of upper side (H) and lower side (L).

b) Double word data (32 bits)
Each 16-bit word data is lined from the higher address to the lower address.
When a 32-bit numeric value is displayed on the GOT-F900, if two word devices are located in the reverse order, the correct value is not displayed because the most significant bit is regarded as the sign (+ or -).

| Specification by microcomputer | Memory inside GOT-F900 (device name specified by screen creation software)*1 | | |
|---|---|---|---|
| Address | Word data (16 bits) | Double word data (32 bits) | |
| 1FFFH | D4095(L) | D4095 | (D4095, D4094) |
| 1FFEH | D4095(H) | | |
| 1FFDH | D4094(L) | D4094 | |
| 1FFCH | D4094(H) | | |
| : | : | : | |
| 0003H | D1(L) | D1 | (D1, D0) |
| 0002H | D1(H) | | |
| 0001H | D0(L) | D0 | |
| 0000H | D0(H) | | |

*1 "D****" shown in this chapter indicates a virtual device inside the GOT-F900, but does not indicate any data register of the PLC.

**2) Bit data (M)**

The bit data consists of 2,048 points (M0 to M2047). The serial number (address) is assigned to each point. Each address stores 8 bit data.

| Specification by microcomputer | Memory inside GOT-F900 (device name specified by screen creation software)*1 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Address | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
| 20FFH | M2047 | M2046 | M2045 | M2044 | M2043 | M2042 | M2041 | M2040 |
| 20FEH | M2039 | M2038 | M2037 | M2036 | M2035 | M2034 | M2033 | M2032 |
| 20FDH | M2031 | M2030 | M2029 | M2028 | M2027 | M2026 | M2025 | M2024 |
| : | : | : | : | : | : | : | : | : |
| 2003H | M31 | M30 | M29 | M28 | M27 | M26 | M25 | M24 |
| 2002H | M23 | M22 | M21 | M20 | M19 | M18 | M17 | M16 |
| 2001H | M15 | M14 | M13 | M12 | M11 | M10 | M9 | M8 |
| 2000H | M7 | M6 | M5 | M4 | M3 | M2 | M1 | M0 |

*1 "M****" shown in this chapter indicates a virtual device inside the GOT-F900, but does not indicate any bit device of the PLC.

**3) Special memory**

The GOT is equipped with 16 word devices (D8000 to D8015) and 64 bit devices (M8000 to M8063) for special purpose. For the detailed contents such as function of each device, refer to the next page.

a) Word data

| Description | Address specified by microcomputer | Memory inside GOT-F900 (device name specified by screen creation software)*1 |
|---|---|---|
| | | Word data (16 bits) |
| Not used | 211FH | D8015(L) |
| | 211EH | D8015(H) |
| | : | : |
| | 2107H | D8003(L) |
| | 2106H | D8003(H) |
| Communication error code | 2105H | D8002(L) |
| | 2104H | D8002(H) |
| Accumulated operating time of GOT (unit: 100 ms) | 2103H | D8001(L) |
| | 2102H | D8001(H) |
| | 2101H | D8000(L) |
| | 2100H | D8000(H) |

*1 "D****" shown in this chapter indicates a virtual device inside the GOT-F900, but does not indicate any data register of the PLC.

b) Bit data

| Description | Address specified by microcomputer | Memory inside GOT-F900 (device name specified by screen creation software)*1 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
| Not used | 2207H | M8063 | M8062 | M8061 | M8060 | M8059 | M8058 | M8057 | M8056 |
| | 2206H | M8055 | M8054 | M8053 | | | | | |
| Interrupt code output forbid | | | | | M8052 | | | | |
| 2-second cycle | | | | | | M8051 | | | |
| 1-second cycle | | | | | | | M8050 | | |
| Interrupt output | | | | | | | | M8049 | M8048 |
| | 2205H | M8047 | M8046 | M8045 | M8044 | M8043 | M8042 | M8041 | M8040 |
| | 2204H | M8039 | M8038 | M8037 | M8036 | M8035 | M8034 | M8033 | M8032 |
| | 2203H | M8031 | M8030 | M8029 | M8028 | M8027 | M8026 | M8025 | M8024 |
| | 2202H | M8023 | M8022 | M8021 | M8020 | M8019 | M8018 | M8017 | M8016 |
| | 2201H | M8015 | M8014 | M8013 | M8012 | M8011 | M8010 | M8009 | M8008 |
| | 2200H | M8007 | M8006 | M8005 | M8004 | M8003 | M8002 | M8001 | M8000 |

*1 "M****" shown in this chapter indicates a virtual device inside the GOT-F900, but does not indicate any bit device of the PLC.

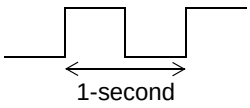
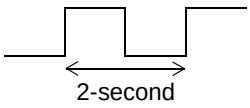
c) Clock data storage addresses

The data on the real-time clock built in the GOT is stored in these addresses.
(Each 16-bit data is stored in the order of upper side and lower side.)

| Description | Address specified by microcomputer | Memory inside GOT-F900 (device name specified by screen creation software) | Remarks |
|---|---|---|---|
| Time (second) | 3000H<br>3001H | GD0 | 00 to 59 (second) |
| Time (minute) | 3002H<br>3003H | GD1 | 00 to 59 (minute) |
| Time (hour) | 3004H<br>3005H | GD2 | 00 to 23 (hour) |
| Date (day) | 3006H<br>3007H | GD3 | 01 to 31 (day) |
| Date (month) | 3008H<br>3009H | GD4 | 01 to 12 (month) |
| Date (year) | 300AH<br>300BH | GD5 | 1980 to 2079 (year) |
| Date (day of week) | 300CH<br>300DH | GD6 | 0 (Sunday) to 6 (Saturday) |

### 14.4.2 Special Memory Data List

<table>
<tr><th>Word device</th><th>Description</th></tr>
<tr><td>D8000, D8001</td><td>32-bit counter of 100ms<br>The time after the power is turned on is counted in the unit of 100ms. The lower word is stored in D8000, and the upper word is stored in D8001.</td></tr>
<tr><td>D8002<br>(Refer to the error code list.)</td><td>Contents of communication error in its own station (error code)<br>Contents of communication error in another station (error code) <available in versions in which connection of two or more GOT units is enabled><br>The contents of error in communication with the microcomputer are shown.<br>Own station (accessed GOT side)<br><table><tr><th>Code</th><th>Description</th></tr><tr><td>0</td><td>No error</td></tr><tr><td>1</td><td>Parity error</td></tr><tr><td>2</td><td>Framing error</td></tr><tr><td>3</td><td>Overrun error</td></tr><tr><td>4</td><td>Incorrect of statement</td></tr><tr><td>5</td><td>Incorrect command</td></tr></table>Another station (between accessed GOT and next GOT)<br><table><tr><th>Code</th><th>Description</th></tr><tr><td>101</td><td>Parity error</td></tr><tr><td>102</td><td>Framing error</td></tr><tr><td>103</td><td>Overrun error</td></tr><tr><td>104</td><td>Incorrect of statement</td></tr><tr><td>105</td><td>Timeout error (no station specified)</td></tr><tr><td>106</td><td>Connection of two or more units disabled*1</td></tr></table>*1 The error code 106 indicates that the RS-232C port is occupied by connecting of a bar code reader or printer.</td></tr>
<tr><td>D8003 to D8015</td><td>Unused</td></tr>
</table>

<table>
<tr><th>Bit device</th><th>Description</th></tr>
<tr><td>M8000 to M8049</td><td>Interrupt output<br>When the bit data status is changed by a touch key, the GOT sends an interrupt code to the microcomputer.
<table>
<tr><th>Device</th><th>Event type</th><th>Interrupt code (hexadecimal)</th></tr>
<tr><td rowspan="2">M8000</td><td>Changed from OFF to ON.</td><td>50H</td></tr>
<tr><td>Changed from ON to OFF</td><td>51H</td></tr>
<tr><td rowspan="2">M8001</td><td>Changed from OFF to ON.</td><td>52H</td></tr>
<tr><td>Changed from ON to OFF</td><td>53H</td></tr>
<tr><td rowspan="2">M8002</td><td>Changed from OFF to ON.</td><td>54H</td></tr>
<tr><td>Changed from ON to OFF</td><td>55H</td></tr>
<tr><td>:</td><td>:</td><td>:</td></tr>
<tr><td rowspan="2">M8047</td><td>Changed from OFF to ON.</td><td>AEH</td></tr>
<tr><td>Changed from ON to OFF</td><td>AFH</td></tr>
<tr><td rowspan="2">M8048</td><td>Changed from OFF to ON.</td><td>B0H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B1H</td></tr>
<tr><td rowspan="2">M8049</td><td>Changed from OFF to ON.</td><td>B2H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B3H</td></tr>
</table>
When the data length is 7 bits, interrupt codes M8024 to M8049 are not output.<br>Even if this data is overwritten by the microcomputer, the GOT does not output interrupt codes.</td></tr>
<tr><td>M8050</td><td>1-second cycle clock<br> 
</td></tr>
<tr><td>M8051</td><td>2-second cycle clock<br> 
</td></tr>
<tr><td>M8052</td><td>Interrupt code output forbid flag <Available in versions in which connection of two or more GOT units is enabled><br>While this bit is ON, no interrupt code is output to the microcomputer.</td></tr>
<tr><td>M8053 to M8063</td><td>Unused</td></tr>
</table>

### 14.4.3 Error Code List

The following errors are stored in D8002.

| Error code | Description | Action |
|---|---|---|
| 00 | No error | |
| 01 | Parity error<br>The parity bit is not matching. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 02 | Framing error<br>Data bits or stop bits are not matching. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 03 | Overrun error<br>Overrun has occurred in receive. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 04 | Communication message error<br>While a communication message was being received, EXT was not found by the time the upper limit of the receive buffer was exceeded. | Confirm the communication message format. |
| 05 | Command error<br>An unsupported request command was used. | Confirm the data of the transmitted request command. |
| 101 | Parity error<br>The parity bit is not matching. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 102 | Framing error<br>Data bits or stop bits are not matching. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 103 | Overrun error<br>Overrun has occurred in receive. | Confirm the transmission specifications of the microcomputer and the GOT-F900. |
| 104 | Communication message error<br>While a communication message was being received, EXT was not found by the time the upper limit of the receive buffer was exceeded. | Confirm the communication message format. |
| 105 | Timeout error<br>(no station specified in command)<br>The GOT did not return a response within the specified time. | Check whether the station number specification is correct in the transmitted request command. |
| 106 | Two- or more-unit function disable error<br>The function to connect two or more GOT units is disabled. | The RS-232C port is occupied by connecting of a bar code reader or printer. |

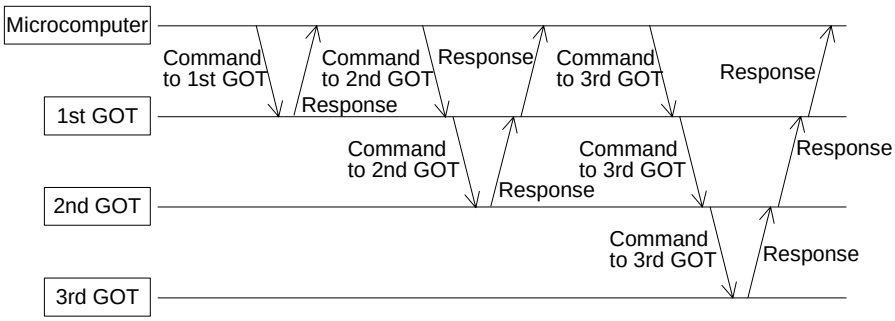
## 14.5 Communication Command

This section explains commands used in communication.

### 14.5.1 Outline of Communication Procedure

**1) Command transmission (outline)**

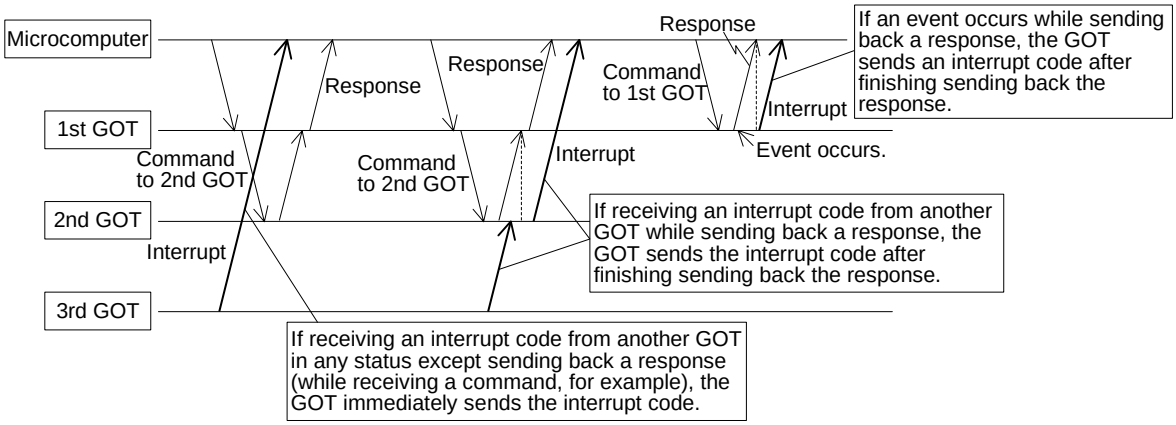
Communication between the GOT-F900 units and the microcomputer is executed in the procedure in which the microcomputer sends a command and a GOT-F900 unit returns a response to it. While a GOT-F900 unit is sending a response to the microcomputer, any GOT-F900 unit cannot receive any new command from the microcomputer.




If an error occurs, the GOT-F900 returns the NAK code as the response. The contents of the error can be seen when the special memory is read.

**2) Outline of interrupt**

As an exception of the communication procedure described above, when a certain event occurs in itself or receiving an interrupt code from another GOT unit, the GOT unit immediately sends the interrupt code to the microcomputer.
However, while sending a response to the microcomputer, the GOT unit waits until sending is finished, then sends the interrupt code after that. An interrupt code may be sent while a command is being received.


Microcomputer
1st GOT
2nd GOT
3rd GOT
Response
Response
Response
Command to 1st GOT
Interrupt
Event occurs.
If an event occurs while sending back a response, the GOT sends an interrupt code after finishing sending back the response.
Command to 2nd GOT
Command to 2nd GOT
Interrupt
Interrupt
If receiving an interrupt code from another GOT while sending back a response, the GOT sends the interrupt code after finishing sending back the response.
If receiving an interrupt code from another GOT in any status except sending back a response (while receiving a command, for example), the GOT immediately sends the interrupt code.

If an event such as change of the ON/OFF status of a certain bit data or a screen changeover occurs by a touch key on the screen, an interrupt code is sent.

### 14.5.2 Command List and Compatible Version of GOT-F900

The table below explains commands used to transfer data between the GOT-F900 and the microcomputer.

Command list

| Command | Command name | Description | Reference |
|---|---|---|---|
| '0' 30H | Batch read command | Consecutively reads data by as much as the specified number of points from the specified device. | 14.6.1 |
| 'A' 41H | | To the command above, specification with the station number is added. <Available in versions in which connection of two or more GOT units is enabled.> | |
| '1' 31H | Batch write command | Consecutively writes data by as much as the specified number of points to the specified device. | 14.6.2 |
| 'B' 42H | | To the command above, specification with the station number is added. <Available in versions in which connection of two or more GOT units is enabled.> | |
| '3' 33H | Bit-oriented write command | Write specified bit device in a byte unit according to a pattern | 14.6.3 |
| 'D' 44H | | | |
| '4' 34H | Fill command | Write specified data to all the devices between specified data and specified data | 14.6.4 |
| 'E' 45H | | | |

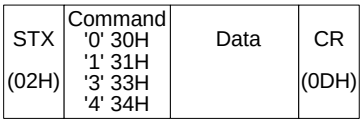
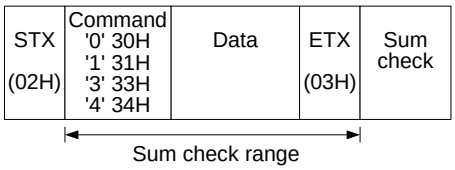
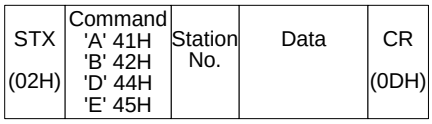
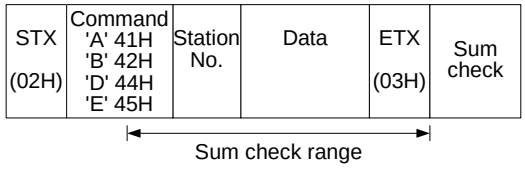
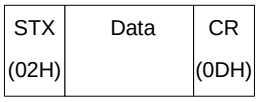
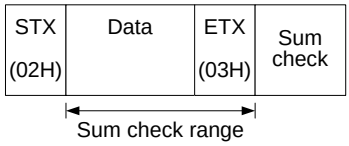
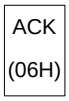
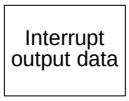
Compatible version of GOT-F900

| | F930GOT | F930GOT-K | F940GOT | F940WGOT | Handy GOT |
|---|---|---|---|---|---|
| Batch read command | Ver1.00 | Ver4.60 | Ver1.00 | Ver1.00 | Ver1.00 |
| Batch write command | Ver1.00 | Ver4.60 | Ver1.00 | Ver1.00 | Ver1.00 |
| Bit-oriented write command | Ver4.50 | Ver4.60 | Ver6.50 | Ver1.50 | Ver6.50 |
| Fill command | Ver4.50 | Ver4.60 | Ver6.50 | Ver1.50 | Ver6.50 |

### 14.5.3 Data Transfer Format (protocol)

The table below explains the data transfer format (protocol) when commands are used.

Protocol list

| Selected protocol | | Format 1 | Format 2 |
|---|---|---|---|
| Format while data is transmitted (microcomputer → GOT) | 1:1 |  |  |
| | Two or more GOT units | <Available in versions in which connection of two or more GOT units is enabled><br>  | <Available in versions in which connection of two or more GOT units is enabled><br>  |
| Format of response data in normal status (GOT → microcomputer) | When read command is transmitted |  |  |
| | When write command is transmitted |  | |
| Format of response data when error has occurred (GOT → microcomputer) | | | |
| Format of interrupt output (GOT → microcomputer) | |  | |

### 14.5.4 Character Code List

The following characters are available in statements. Interrupt codes include unused codes.

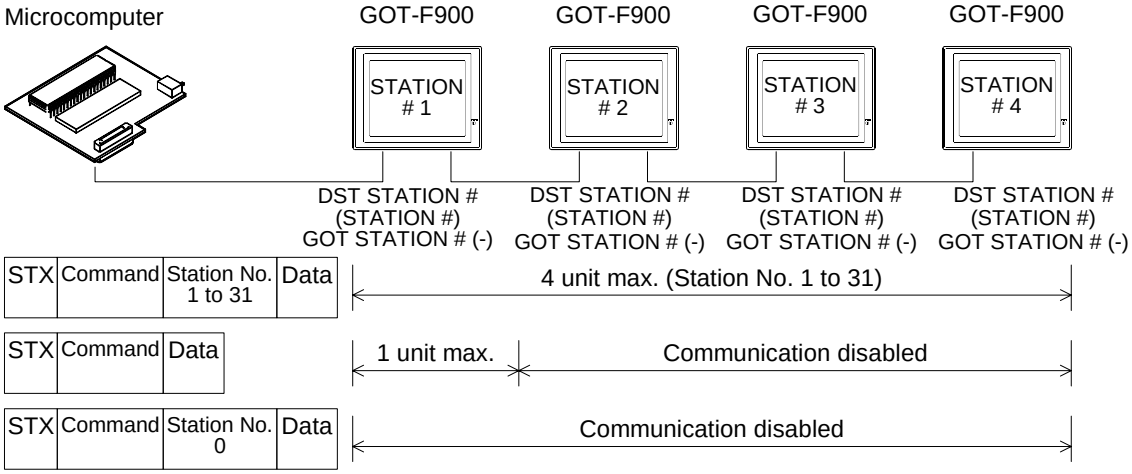
| | Character code (hexadecimal) |
|---|---|
| STX | 02H |
| ETX | 03H |
| CR | 0DH |
| ACK | 06H |
| NAK | 15H |
| '0'~'9' | 30~39H |
| 'A'~'F' | 41~46H |

| | Character code (hexadecimal) |
|---|---|
| Interrupt code | 20~2FH |
| | 50~7FH |
| | 80F~FFH (Valid only when data length is 8 bits) |

### 14.5.5 Station Number Setting

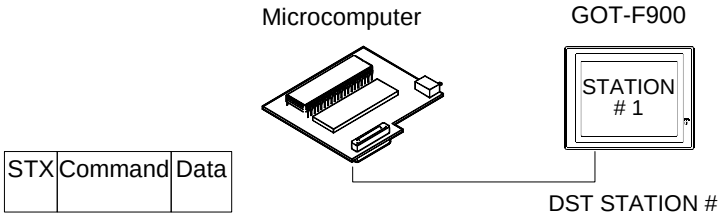
**When connecting two or more GOT units**

When connecting two or more GOT units to the microcomputer, add a station number (1 to 31) to the command of microcomputer and then set the destination station number (DST STA #) in the screen creation software or in the GOT. Do not set the same number to multiple GOT units.
No setting for GOT STA # is required. (It is 0.)


Microcomputer
GOT-F900
GOT-F900
GOT-F900
GOT-F900
STATION # 1
STATION # 2
STATION # 3
STATION # 4
DST STATION # (STATION #) GOT STATION # (-)
DST STATION # (STATION #) GOT STATION # (-)
DST STATION # (STATION #) GOT STATION # (-)
DST STATION # (STATION #) GOT STATION # (-)
STX Command Station No. 1 to 31 Data
4 unit max. (Station No. 1 to 31)
STX Command Data
1 unit max.
Communication disabled
STX Command Station No. 0 Data
Communication disabled

**When connecting on the 1:1 basis**

When connecting one GOT unit to the microcomputer, set 0 for the destination station number (DST STA #) in the screen creation software or in the GOT.
No setting for GOT STA # is required. (It is 0.)




### 14.5.6 Sum Check Code

The sum check code indicates the numeric value of the lower 1 byte (8 bits) of the result obtained when the data in the sum check range is added as the binary data (sum).

Example: When the RD command is executed for the used address 100 (D50)

| STX | RD | Address | | | | Number of points | | ETX | Sum check | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 0 | 0 | 0 | 2 | | 5 | 6 |
| (02H) | (30H) | 30H | 31H | 30H | 30H | 30H | 32H | 03H | 35H | 36H |

Sum check range

Expression: 30H+30H+31H+30H+30H+30H+32H+03H=156H

### 14.5.7 Interrupt Code List

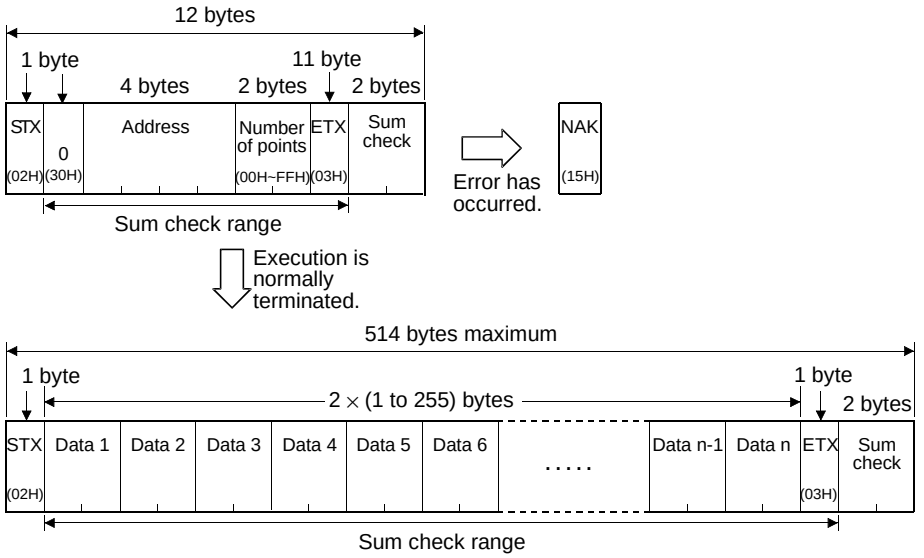
The table below shows the correspondence between interrupt codes and event types.

| Interrupt code (hexadecimal) | Event type |
|---|---|
| 20H | The screen is changed over. |
| 21H | Input of a numeric value is completed. |
| 22H | Transfer of a data file is completed. |
| 23H | Read of bar code data is completed. |
| 50H<br>51H | M8000 has changed to ON.<br>M8000 has changed to OFF. |
| 52H<br>53H | M8001 has changed to ON.<br>M8001 has changed to OFF. |
| : | : |
| 7EH<br>7FH | M8023 has changed to ON.<br>M8023 has changed to OFF. |
| : | : |
| B2H<br>B3H | M8049 has changed to ON.<br>M8049 has changed to OFF. |

## 14.6 Command Details

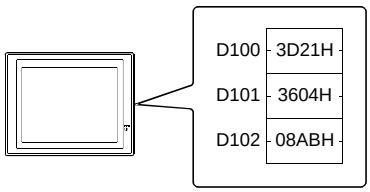
### 14.6.1 Batch Read Command (RD)

The contents of the batch read command are explained below as an example of the format 2.




**Use Example**

When virtual devices D100 to D102 of the GOT-900 are read.




| STX | RD | Address | | | | Number of points | | ETX | Sum check | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | C | 8 | 0 | 6 | | 7 | 4 |
| (02H) | (30H) | 30H | 30H | 43H | 38H | 30H | 36H | (03H) | 37H | 34H |

Transmitted from the microcomputer to the GOT.

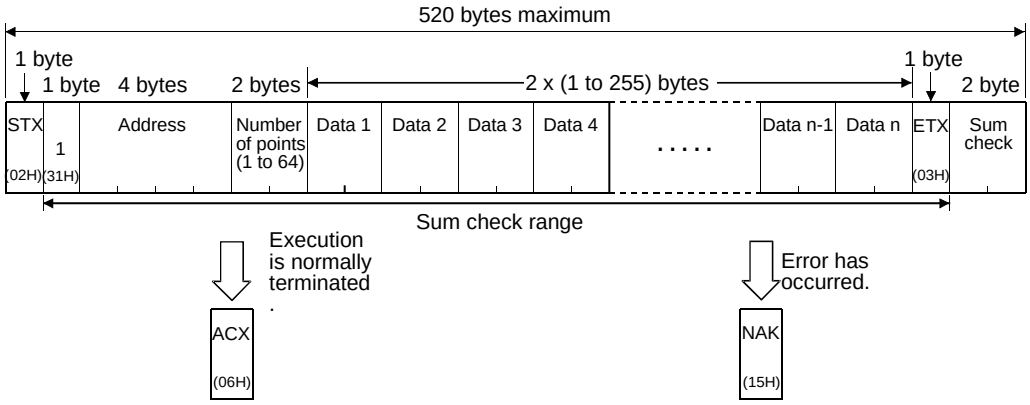
Execution is normally terminated.

| STX | D100 | | | | D101 | | | | D102 | | | | ETX | Sum check | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | D | 2 | 1 | 3 | 6 | 0 | 4 | 0 | 8 | A | B | | 9 | 5 |
| (02H) | 33H | 44H | 32H | 31H | 33H | 36H | 30H | 34H | 30H | 38H | 41H | 42H | (03H) | 39H | 35H |

Transmitted from the GOT to the microcomputer.

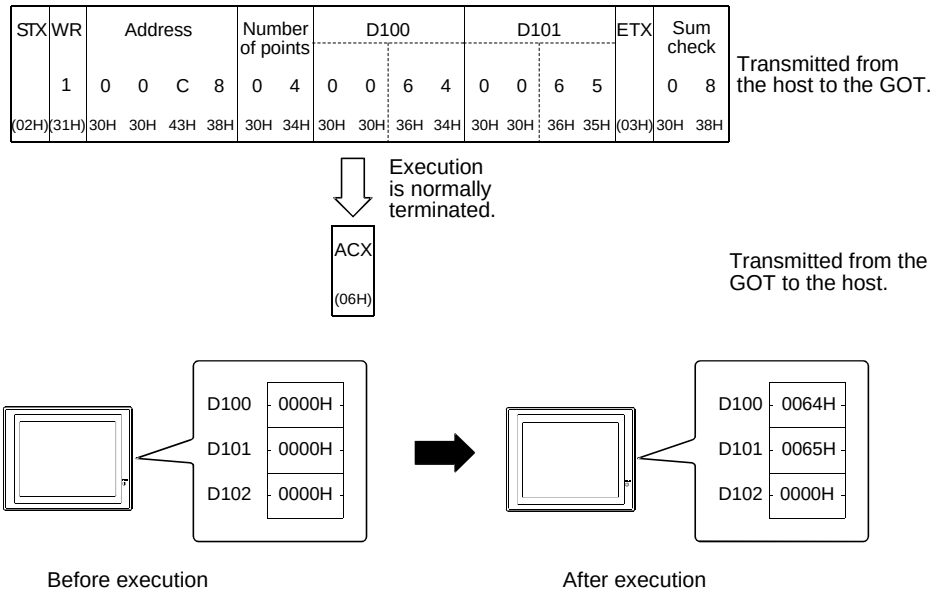
## 14.6.2 Batch Write Command (WR)

The contents of the batch write command are explained below as an example of the format 2.



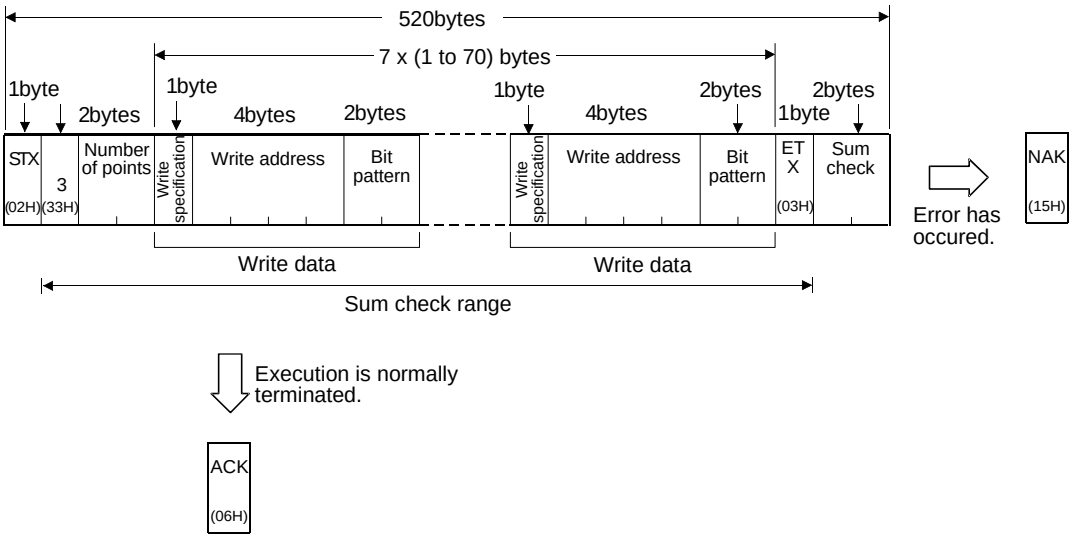

### Use Example

When "64H" and "65H" are written respectively to virtual devices D100 and D101 of the GOT-F900.


STX WR Address Number of points D100 D101 ETX Sum check
1
0 0 C 8
0 4
0 0 6 4
0 0 6 5
0 8
(02H) (31H) 30H 30H 43H 38H 30H 34H 30H 30H 36H 34H 30H 30H 36H 35H (03H) 30H 38H
Transmitted from the host to the GOT.
Execution is normally terminated.
ACX
(06H)
Transmitted from the GOT to the host.
D100 0000H
D101 0000H
D102 0000H
D100 0064H
D101 0065H
D102 0000H
Before execution
After execution

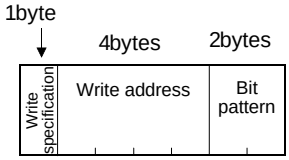
### 14.6.3 Bit-oriented Write Command

The contents of bit-oriented write command are explained below as an example of the format 2.




**Specification of write data**

Up to 70 points of write data can be specified per command.
One portion of write data is shown below.




**1) Write specification**

The address data specified by the write address and the value specified by the bit pattern determine how the change should be.

| Function | Write specification | Specification | Example |
|---|---|---|---|
| ON specification | 0(30H) | Set '1' for the bit to turn ON with the bit pattern. Set '0' for the bit not to change. | Original data 1010<br>Bit pattern 1100<br>↓<br>1110 |
| OFF specification | 1(31H) | Set '1' for the bit to turn OFF with the bit pattern. Set '0' for the bit not to change. | Original data 1010<br>Bit pattern 1100<br>↓<br>0010 |
| Reverse specification | 2(32H) | Set '1' for the bit to reverse with the bit pattern. Set '1' for the bit not to change. | Original data 1010<br>Bit pattern 1100<br>↓<br>0110 |
| Write specification | 3(33H) | Set the numerical value to write with the bit pattern. | Original data 1010<br>Bit pattern 1100<br>↓<br>1100 |

**2) Write address**

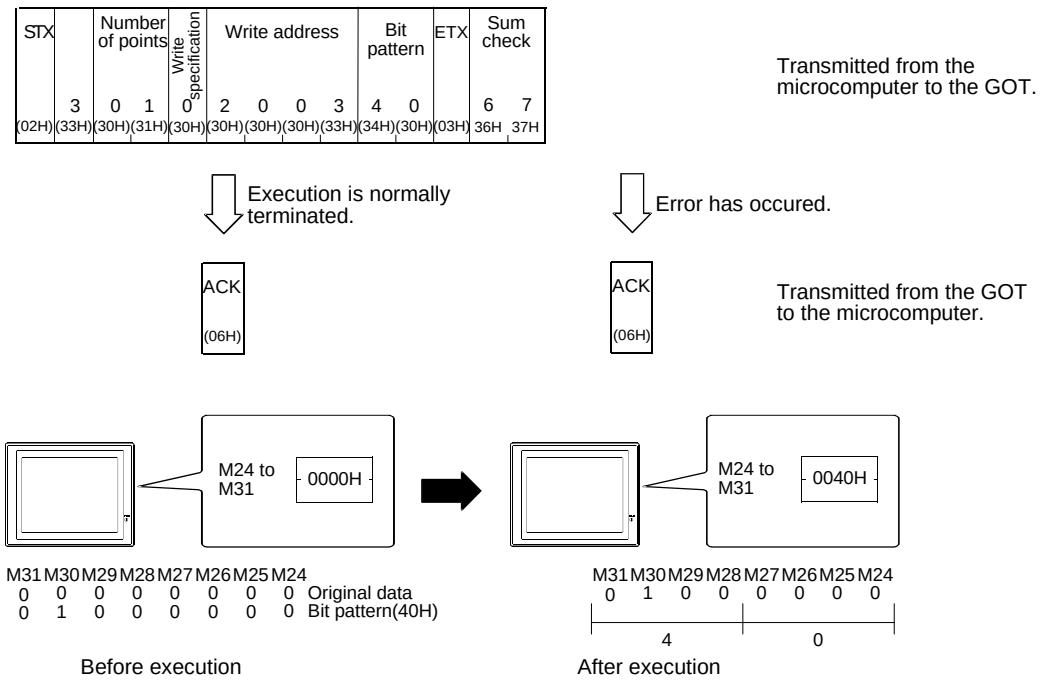
The address of bit device or word device (hexadecimal) is specified to write.

**3) Bit pattern**

The bit pattern is specified to change.
(The pattern expressed in 1 byte is set to a 2byte ASCII code.)

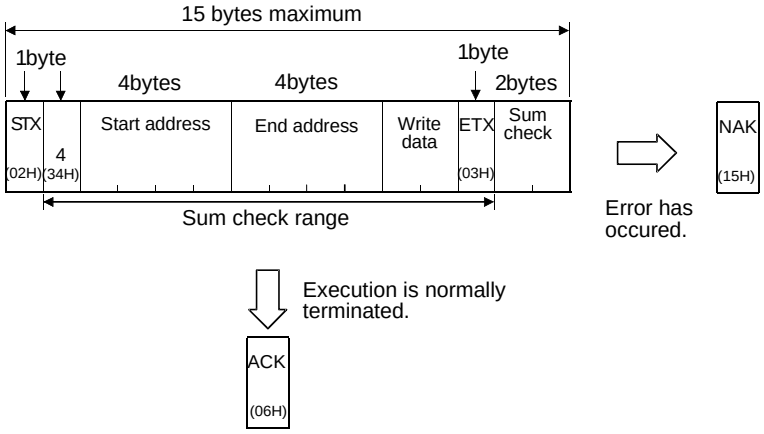
**Use example**

In case only M30 bit in the GOT-F900 virtual device is set ON by ON specification


STX
Number of points
Write specification
Write address
Bit pattern
ETX
Sum check
3 0 1 0 2 0 0 3 4 0 6 7
(02H)(33H)(30H)(31H)(30H)(30H)(30H)(30H)(33H)(34H)(30H)(03H) 36H 37H
Transmitted from the microcomputer to the GOT.
Execution is normally terminated.
Error has occured.
ACK (06H)
ACK (06H)
Transmitted from the GOT to the microcomputer.
M24 to M31
0000H
M24 to M31
0040H
M31 M30 M29 M28 M27 M26 M25 M24
0 0 0 0 0 0 0 0 Original data
0 1 0 0 0 0 0 0 Bit pattern(40H)
M31 M30 M29 M28 M27 M26 M25 M24
0 1 0 0 0 0 0 0
4 0
Before execution
After execution

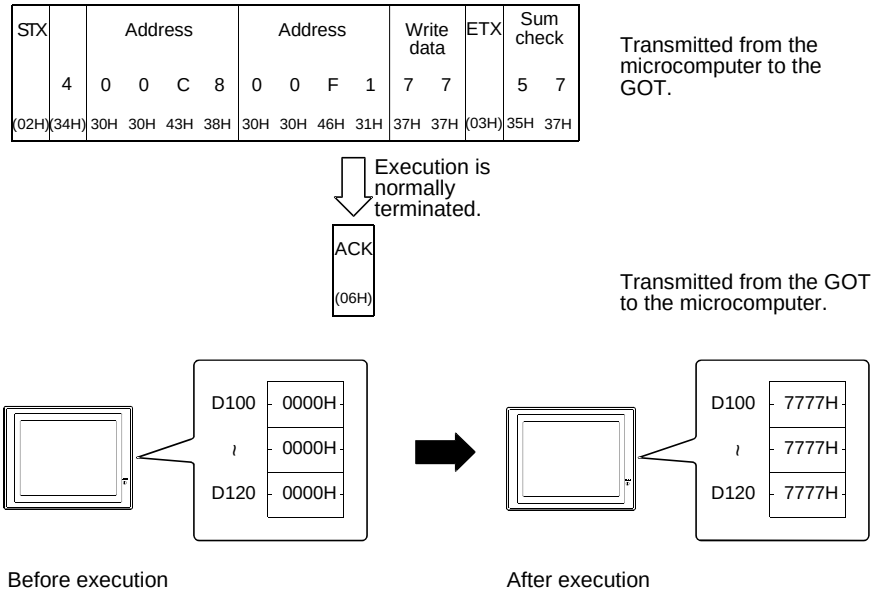
### 14.6.4 Fill Command

The contents of fill command are explained below as an example of the format 2.




**Use example**

When "77H" is written to virtual devices D100 (H) through D120 (L) of the GOT-F900.

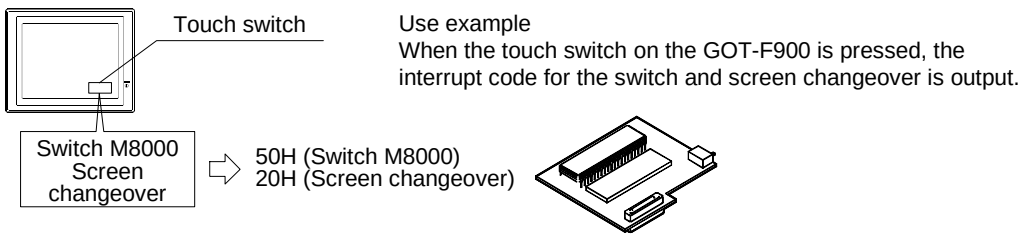



**Specification of start address and end address**

Specify the address so that 'Start address ≤ End address'.
If 'Start address > End address' or either address is over GB1023, an error (NAK) is sent back.

### 14.6.5 Interrupt Code

The interrupt code is explained in the example below.




Use example
When the touch switch on the GOT-F900 is pressed, the interrupt code for the switch and screen changeover is output.

## 14.7 Setting of Connected Equipment for GOT

The microcomputer connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:UNIVERSAL<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00(01 to 31 when two or more GOTs are connected)<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: UNIVERSAL<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00(01 to 31 when two or more GOTs are connected)<br>GOT STATION # (–) : – | |

Set the transmission specifications consecutively.

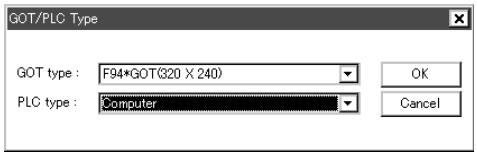
↓

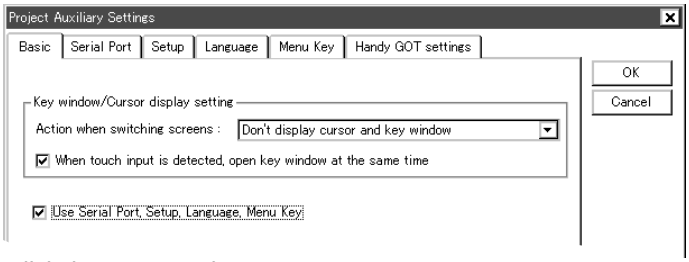
Setting the transmission specifications for microcomputer connection

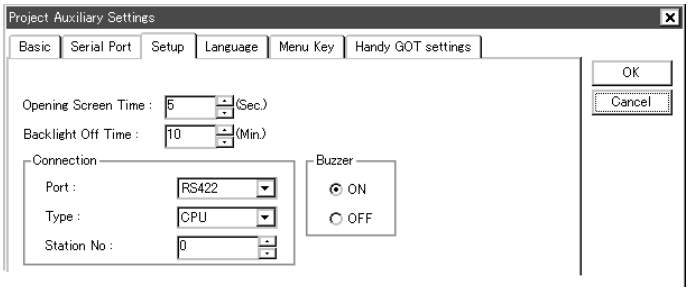
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "SERIAL PORT".<br>Set the transmission specifications as in the microcomputer.<br>Make sure to set a printer to "DON'T USE". | The "SERIAL PORT" screen appears. |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open GT Designer.<br><br>b) Click the [New] button.<br> 

<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>PLC type: Computer<br>Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
</table>
Click [OK].<br><br>d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

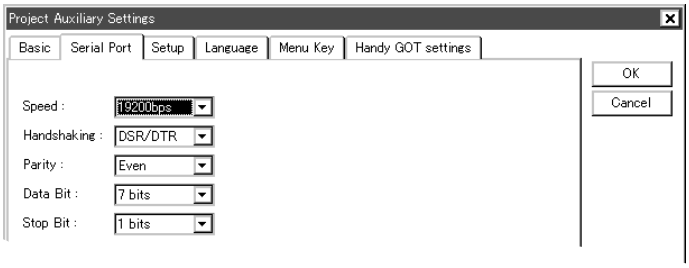
<br>Click the "Setup" tab.<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| | In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 00 ((01 to 31 when two or more GOTs are connected))<br>GOT Station No. (–) : – | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [New] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

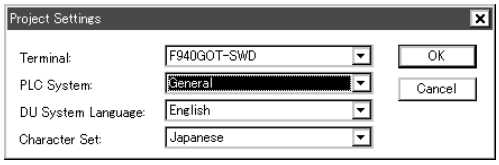
Set the transmission specifications consecutively.

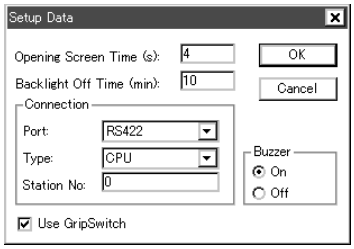
↓

Setting the transmission specifications for microcomputer connection

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) On the menu, select "Common"-"Auxiliary Setting"-"Project"-"Serial Port".<br>  <br><br>b) Set the transmission specifications set in the microcomputer.<br>Set "Speed", "Parity", "Data Bit" and "Stop Bit".<br>(Handshaking not available) | The "Project Auxiliary Settings" dialog box appears. |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br><br>b) On the menu, select "File"-"New".<br> 

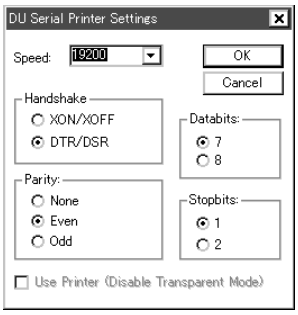
<br>c) Set the following.<br>Terminal: F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: MELSEC-QnA, Q<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900. On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

<br>e) Set the following.<br>Port: RS-422<br>RS-232C<br>Type: CPU<br>DST Station No. (Station No.): 00 ((01 to 31 when two or more GOTs are connected))<br>GOT Station No. (–) : –</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.</td><td>The "Open" dialog box appears.</td></tr>
</table>

Set the transmission specifications consecutively.

↓

Setting the transmission specifications for microcomputer connection

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) On the menu, select "View/Project"-"System Settings"-"DU-Printer".<br>  <br><br>b) Set the transmission specifications set in the microcomputer. Set "Speed", "Parity", "Databits" and "Stopbits". (Handshake not available) | The "DU Serial Printer Settings" dialog box appears. |

## 14.8 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the general-purpose equipment (microcomputer).

**1) Cable for the GOT and the microcomputer**

: Female type : Male type The connector figure shows the engagement face.

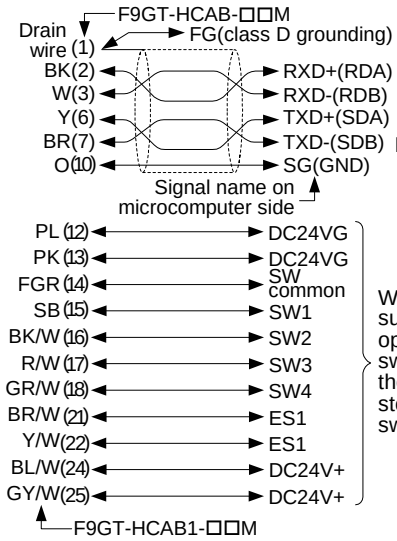
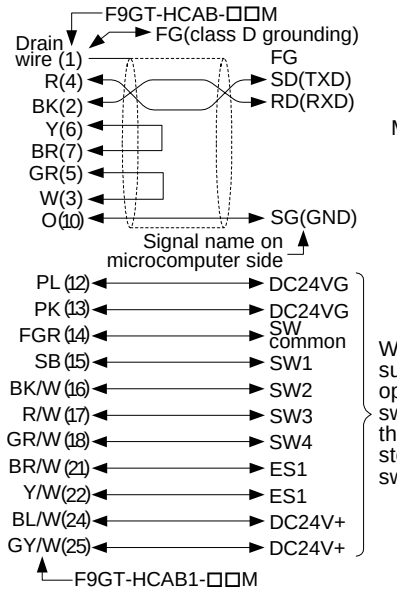
| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | General-purpose equipment Prepared by the user — RS-422 connection | GOT-F900 1 5 6 9 9-pin D-Sub, male | FG(class D grounding) (1) (6) (2) (7) (5) — FG(class D grounding), RXD+(RDA), RXD-(RDB), TXD+(SDA), TXD-(SDB), SG(GND); Signal name on microcomputer side | Microcomputer side |
| b) | Prepared by the user — RS-232C connection | GOT-F900 5 1 9 6 9-pin D-Sub, female | (2) (3) (7) (8) (6) (4) (5) — FG(class D grounding), SD(TXD), RD(RXD), SG(GND); Signal name on microcomputer side | Microcomputer side *1 |

*1 Control lines RTS, CTS, DTR and DSR are not used.

### 2) Cable for the Handy GOT and the microcomputer

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | General-purpose equipment<br>Prepared by the user | RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  |
| d) | Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  |

*1 Control lines RTS, CTS, DTR and DSR are not used.

## 14.9 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the microcomputer.

**1) GOT-F900**

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the microcomputer is turned off.<br>• Cause<br>Communication is disabled because the power of the microcomputer is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the microcomputer.<br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the microcomputer was tried.<br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | There is an error on the screen to be displayed.<br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | From first product | From first product |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |

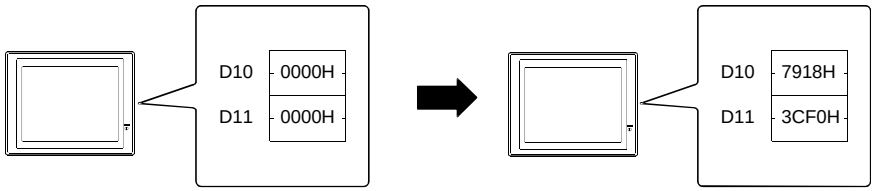
| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A microcomputer, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code printer to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

## 14.10 BASIC Program Example

This program writes "31000" to D10 and "15600" to D11 respectively.
"31000" is "7918H" and "15600" is "3CF0H" in hexadecimal. These two values are written to the GOT by the batch write command (01H).




Before execution After execution

```
10'     Sample program
20'
500     T0=3000                 :'Counter waiting for receive (to be adjusted in accordance with
                                  speed of computer)
530     ERFLG=0
610     STX$=CHR$(2)
620     CR$=CHR$(13)
630     ACK$=CHR$(6)
640     NAK$=CHR$(&H15)
1000  * DATASEND                :'Sends of statement
1010    CLOSE#1
1020    OPEN"COM1ÅF"AS#1
1030    SENDDATA$="100140479183CF0"       :'Send statement
1040    PRINT#1, STX$;SENDDATA$;CR$;
1100  * REC0                    :'Receive of first character
1110    RVCNT=1
1120    GOSUB *JYUSHIN
1130    IF ERFLG=99 THEN GOTO *ERRORFIN1
1140    BUF$=RCV$
1150    HED$=LEFT$(BUF$,1)
1160    IF HED$=ACK$ THEN GOTO *FIN
1170  * ERRORFIN1
1180    PRINT"Error code is sent back."
1190    GOTO *FIN
1700  * ERRORFIN1
1710    PRINT"No response"
2000  * FIN
2010    CLOSE#1
2020    END
2100  * JYUSHIN                 :'Waiting for receive
2110    FORI=1 TO T0
2120    RCV$=""
2130    IF LOC(1)=>RVCNT THEN GOTO *BUFIN
2140    NEXT
2150    IF RCV$=""THEN ERFLG=99
2160    RETURN
2200  * BUFIN                   :'Reads of receive data
2210    RCV$=INPUT$(RVCNT,#1)
2220    RETURN
```

# 15. Connection of SYSMAC C Series PLC (Manufactured by Omron)

This chapter explains the procedure to connect the GOT-F900 Series display unit to the SYSMAC C Series PLC.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the SYSMAC C Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 15.1 |
| Classification of Host Link/Serial Communication Units | You can learn the classification of the CQM1, C200H and CS1 Series units. | 15.1.1 |
| System Configuration | You can select the configuration between the GOT and the SYSMAC C Series PLC and proper cables. | 15.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting in CQM1/C200H Host Link Unit | You can learn the communication specifications and the contents of setting.<br>Communication Setting Specifications: The communication specifications between the host link host and the GOT unit — 15.3.1<br>Setting Examples in Host Link Units: The contents and position of setting in each host link unit — 15.3.2 | 15.3 |
| Setting in CS1 | You can learn the communication specifications and the contents of setting.<br>Communication Setting Specifications: The communication specifications between the serial communication unit and the GOT unit — 15.4.1<br>Setting Examples: The contents and position of setting in each serial communication unit — 15.4.2 | 15.4 |
| Caution on Use of SYSMAC C Series PLC | You can learn the restrictions in connecting the GOT to the SYSMAC C Series PLC. | 15.5 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 15.6 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for SYSMAC C Series PLC/GOT connection | 15.7 |
| Troubleshooting | Description of errors and how to fix them | 15.8 |

## 15.1 System Condition

When connecting the SYSMAC C Series PLC, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting SYSMAC C Series PLC (CQM1/C200H)

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | ✓ | ✓ | – | 1.00 | SW1-H | 2.20 |
| F930GOT-K | ✓ | ✓ | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | – | 1.00 | SW1-A | 2.00 |
| F940WGOT | ✓ | ✓ | ✓ | – | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | – | 1.00 | SW1-D | 2.10 |
| F943 Handy GOT | – | ✓ | ✓ | – | 1.00 | SW1-D | 2.10 |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

Compatibility when connecting SYSMAC C Series PLC (CS1)

| Type | F930GOT | F930GOT-K | F940GOT | F940WGOT | Handy GOT |
|---|---|---|---|---|---|
| Applicable version of GOT-F900 | 4.00 | 4.60 | 6.00 | 1.00 | 6.00 |

- The screen creation software (GT Designer) version SW5-F (version 5.05F) or later which is applicable to the CS1 Series is required.
  If screens are created using a version earlier than SW5-F (version 5.05F) or the DU/WIN, some devices extended in the CS1 Series cannot be set. (In such a case, set devices in the range for the C200H Series.)
  The DU/WIN will be applicable.

### 15.1.1 Classification of Host Link/Serial Communication Units

In this section, the SYSMAC C Series units are classified as shown in the table below.

**Classification**

| Series | Product model name | Product type | RS-422 | RS-232C |
|---|---|---|---|---|
| CQM1 | CQM1 (equipped with built-in RS-232C port) | CPU equipped with built-in RS-232C port (set as host link unit) | – | 1 |
| C200H | C200H-LK201-V1 | Host link unit | – | 1 |
| | C200H-LK202-V1 | Host link unit | 1 | – |
| CS1 | CS1G/H-CPU-**-V1 (equipped with built-in RS-232C port) | CPU equipped with built-in serial communication board | – | 1 |
| | CS1W-SCB41 | Serial communication board | 1 | 1 |
| | CS1W-SCB21 | Serial communication board | – | 2 |
| | CS1W-SCU21 | Serial communication unit | – | 2 |

The difference between the CS1 serial communication board and the CS1 serial communication unit is as follows.

Board: Built in the CPU Unit: Card type to be attached

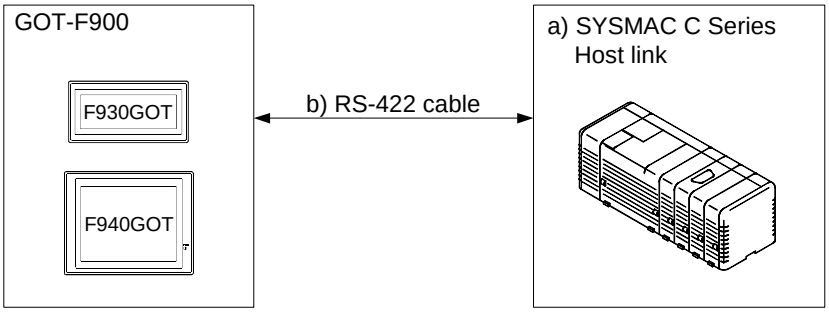
## 15.2 System Configuration

In the SYSMAC C Series PLC manufactured by Omron, using either RS-422 connection or RS-232C connection in host link units (including serial communication units/boards) is available. This section explains the cables and options required to connect the SYSMAC C Series PLC.

### 15.2.1 Configuration for SYSMAC C Host Link Connection (RS-422)

The GOT-F900 and the host link unit can be connected on the 1:1 basis. As many GOT-F900 units as the number of host link units attached to the C200H/CS1 can be connected.

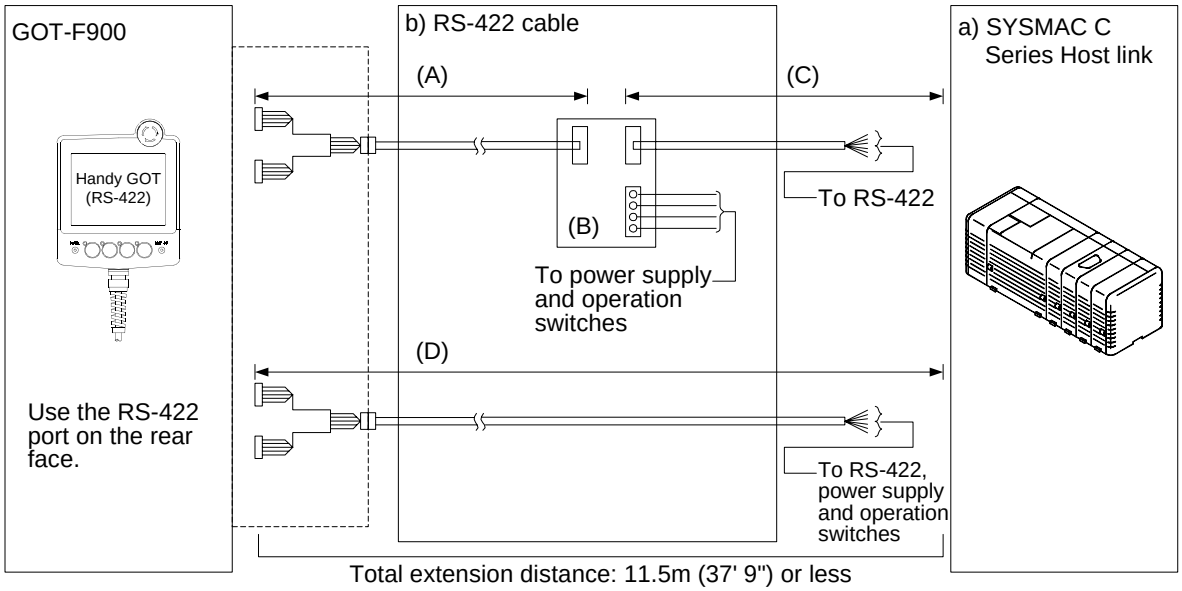
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) SYSMAC C Series | | b) RS-422 cable | Remarks |
|---|---|---|---|
| C200H-LK202-V1 | 9-pin D-Sub | Prepared by the user | Host link unit |
| CS1W-SCB41 | 9-pin D-Sub | Prepared by the user | Serial communication unit |

- Applicable SYSMAC C Series products in the column a) are host link units equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



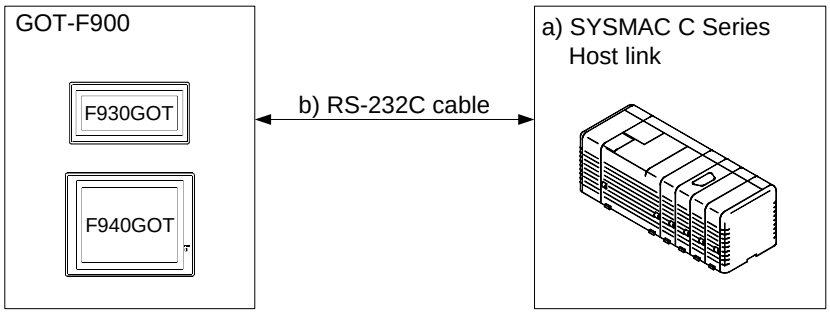

| a) SYSMAC C Series | | b) RS-422 cable | Remarks |
|---|---|---|---|
| C200H-LK202-V1 | 9-pin D-Sub | (A) F9GT-HCAB-□□M<br>(B) F9GT-HCNB<br>(C) Prepared by the user<br>(D) F9GT-HCAB1-□□M | Host link unit |
| CS1W-SCB41 | 9-pin D-Sub | | Serial communication unit |

- Applicable SYSMAC C Series products in the column a) are host link units equipped with built-in RS-422 interface.

### 15.2.2 Configuration for SYSMAC C Host Link Connection (RS-232C)

The GOT-F900 and the host link unit can be connected on the 1:1 basis.
One GOT-F900 unit can be connected to the RS-232C built in the CQM1 or CS1 CPU, and as many GOT-F900 units as the number of host link units attached to the C200H or CS1 can be connected.

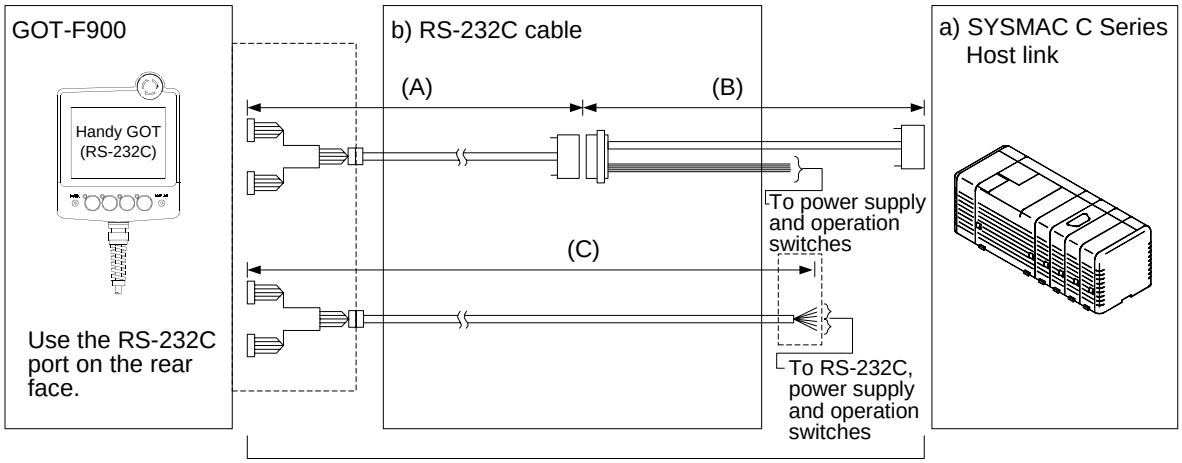
**1) In the case of F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) SYSMAC C Series | | b) RS-232C cable | Remarks |
|---|---|---|---|
| C200H-LK201-V1 | 25-pin D-Sub | Prepared by the user | Host link unit |
| CQM1 (equipped with built-in RS-232C port) | 25-pin D-Sub | Prepared by the user | Host link unit |
| CS1G/H-CPU-**-V1 (equipped with built-in RS-232C port) | | Prepared by the user | CPU unit |
| CS1W-SCB41 | | Prepared by the user | Serial communication board |
| CS1W-SCB21 | | Prepared by the user | Serial communication board |
| CS1W-SCU21 | | Prepared by the user | Serial communication board |

- Applicable SYSMAC C Series products in the column a) are host link units equipped with built-in RS-232C interface.

### 2) F943 Handy GOT




| a) SYSMAC C Series | | b) RS-232C cable | Remarks |
|---|---|---|---|
| C200H-LK201-V1 | 25-pin D-Sub | (A) F9GT-HCAB-3M | Host link unit |
| CQM1 (equipped with built-in RS-232C port) | 9-pin D-Sub | (B) Prepared by the user | CPU unit |
| CS1G/H-CPU-**-V1 (equipped with built-in RS-232C port) | | (C) F9GT-HCAB1-3M | CPU unit |
| CS1W-SCB41 | | | Serial communication unit |
| CS1W-SCB21 | | | Serial communication unit |
| CS1W-SCU21 | | | Serial communication unit |

- Applicable SYSMAC C Series products in the column a) are host link units equipped with built-in RS-232C interface.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6 m or less.

## 15.3 Setting in CQM1/C200H Host Link Unit

While referring to the setting examples in the SYSMAC C Series host link unit, set the transmission specifications.

### 15.3.1 Communication Setting Specifications

This section explains the contents of setting in the host link unit.

**1) Setting the transmission specifications**

Set the transmission specifications in the host link unit as shown in the table below. For the switch setting method, refer to the manual of each host link unit.

| Item | | Set value | Remarks |
|---|---|---|---|
| Transmission speed | | 19200 bps | |
| Data format | Data bit | 7bit | |
| | Parity bit | Provided (even) | |
| | Stop bit | 2 bits | |
| Command level | | 1, 2 or 3 | |
| Procedure | | 1 : N | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting the unit number (station number) setting switches**

The unit number is regarded as the station number in the GOT-F900.
Set the unit number setting switches to the value as in the GOT-F900 (0 to 15).

### 15.3.2 Setting Examples in Host Link Units

While referring to the setting examples in the SYSMAC C Series host link units, set the transmission specifications.
The examples below explain the setting in the CQM1 (equipped with built-in RS-232C port), the C200H-LK201-V1 and the C200H-LK202-V1.

**1) In the case of CQM1**

Setting by data memory (DM)

| Setting item | Set value | Remarks |
|---|---|---|
| Setting of standard communication condition (RS-232C: DN6645) | 0001H | Mode specification: Upper link<br>Communication condition: In accordance with DM6646 |
| Setting of communication condition (RS-232C: DN6646) | 0304H | Transmission format: 7 data bits, 2 stop bits, even parity<br>Transmission speed: 19,200 bps |
| Setting of transmission delay time (RS-232C: DM6647) | 0000H (default status) | 0 sec |
| Setting of unit number (RS-232C: DM6648) | 00××H | ××: 2-digit BCD<br>(in accordance with the setting on the GOT side) |

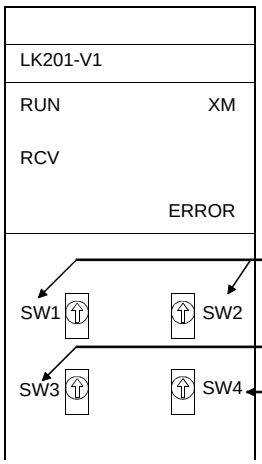
### 2) In the case of C200H-LK201-V1 when the host link unit attached to C200H

Setting by each switch

| Switch position | Setting item | Switch setting | | Remarks | |
|---|---|---|---|---|---|
| Front face | Unit number | SW1 | – | BCD upper digit | (Correspond to the station number of the GOT-F900.) |
| | | SW2 | – | BCD lower digit | |
| | Transmission speed | SW3 | 6 | 19200bps | |
| | Communication condition | SW4 | 2 | 7-bit ASCII, 2 stop bits, even parity, command level 1, 2 or 3 | |
| Rear face | Procedure | DIP. SW No.3 | ON | 1:N procedure | |
| | 5V power supply | DIP. SW No.4 | OFF | 5V is not supplied. | |
| | CTS changeover | Selector SW | Upper side | External | |

**Setting Example**

Switch setting on the front face




1) SW1 and SW2 (setting of unit number)
Set "SW1: 0, SW2: 0" (to set the unit number 00).

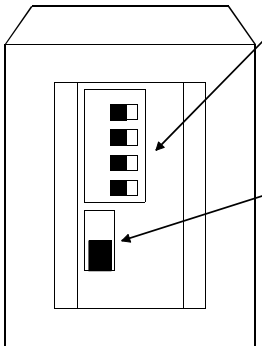
2) SW3 (setting of transmission speed)
Set "SW3:6" (to set 19200bps).

3) SW4 (setting of command level, parity and transmission code)
Set "SW4:2" (to set even parity, 7-bit ASCII and 2 stop bits).

4) 5V supply SW

| SW No. | ON | OFF |
|---|---|---|
| 1 | Not used (to be set to OFF) | |
| 2 | | |
| 3 | 1:N procedure | 1:1 procedure |
| 4 | 5V is supplied. | 5V is not supplied. |

Switch setting on the rear face



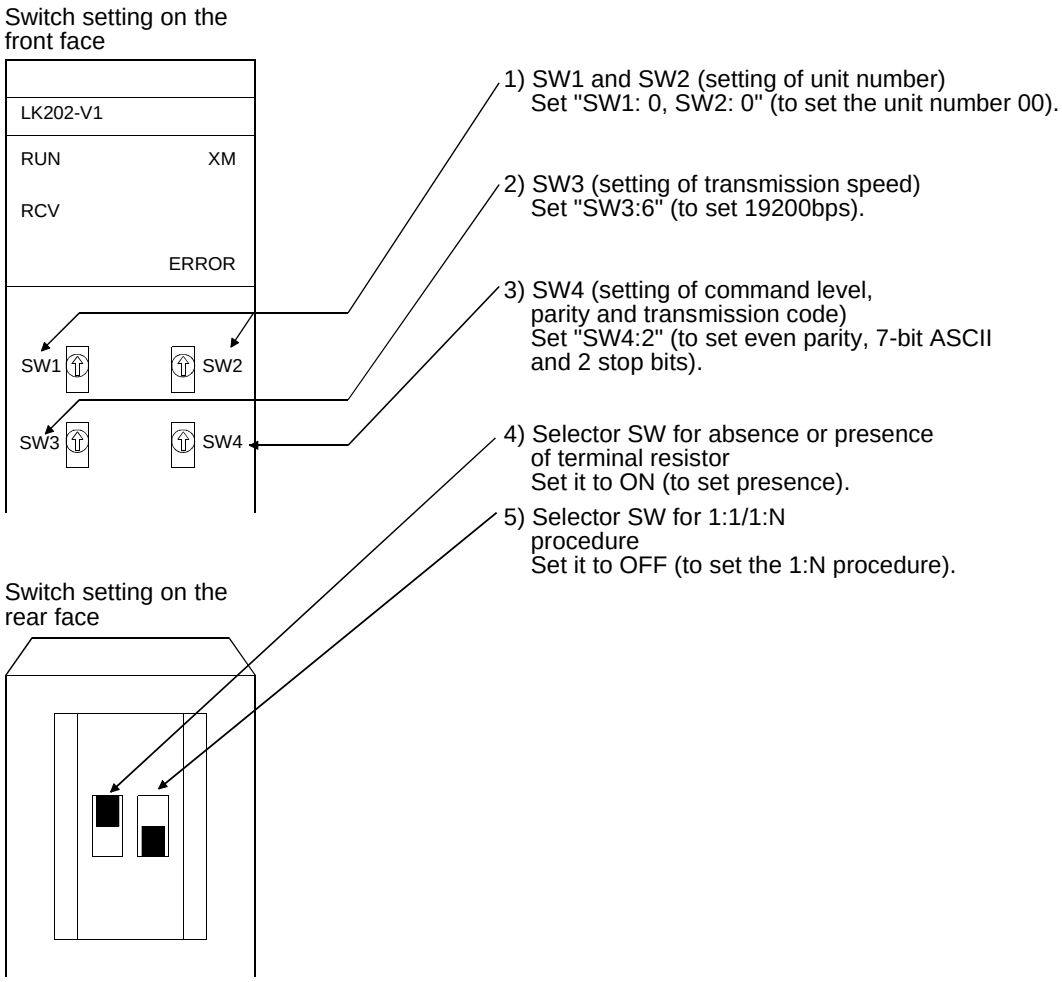
5) CTS selector SW
Set the switch to the 0V side to always set the CTS to ON.
Set the switch to the external side to receive from the outside.
Usually, set this switch to the 0V side.

### 3) In the case of C200H-LK202-V1 when the host link unit attached to C200H

Setting by each switch

| Switch position | Setting item | Switch setting | | Remarks | |
|---|---|---|---|---|---|
| Front face | Unit number | SW1 | – | BCD upper digit | (Correspond to the station number of the GOT-F900.) |
| | | SW2 | – | BCD lower digit | |
| | Transmission speed | SW3 | 6 | 19200bps | |
| | Communication condition | SW4 | 2 | 7-bit ASCII, 2 stop bits, even parity, command level 1, 2 or 3 are valid | |
| Rear face | Procedure | Right selector SW | Lower side | 1:N procedure | |
| | Terminal resistor connection | Left selector SW | Upper side | Presence | |

### Setting Example


Switch setting on the front face
LK202-V1
RUN
XM
RCV
ERROR
SW1
SW2
SW3
SW4
1) SW1 and SW2 (setting of unit number)
Set "SW1: 0, SW2: 0" (to set the unit number 00).
2) SW3 (setting of transmission speed)
Set "SW3:6" (to set 19200bps).
3) SW4 (setting of command level, parity and transmission code)
Set "SW4:2" (to set even parity, 7-bit ASCII and 2 stop bits).
4) Selector SW for absence or presence of terminal resistor
Set it to ON (to set presence).
5) Selector SW for 1:1/1:N procedure
Set it to OFF (to set the 1:N procedure).
Switch setting on the rear face

## 15.4 Setting in CS1 Serial Communication Unit

When setting the GOT-F900 to the CS1 Series serial communication unit, the following data should be written to the data memory (DM) using a peripheral tool.

### 15.4.1 Communication Setting Specifications

This section explains the communication specifications set in the serial communication unit.

**1) Setting the transmission specifications**

Set the transmission specifications in the serial communication unit setting as shown in the table below. For the switch setting method, refer to the manual of each host link unit.

| Item | | Set value | Remarks |
|---|---|---|---|
| Transmission speed | | 19200 bps | |
| Data format | Data bit | 7 bits | |
| | Parity bit | Provided (even) | |
| | Stop bit | 2 bits | |
| Command level | | Host link mode | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting the unit number (station number) setting switch**

The unit number is regarded as the station number in the GOT-F900.As shown in the table below, the setting range varies depending on the OS version.

| GOT-F900 | OS version | Setting contents |
|---|---|---|
| F920GOT-K | – | – |
| F930GOT | 3.00 or later | Set the value as in the GOT-F900 (0 to 31). |
| F930GOT-K | 4.60 or later | |
| F940GOT | 5.00 or later | |
| F940WGOT | 1.00 or later | |
| F940 Handy GOT | 5.00 or later | |
| F943 Handy GOT | 5.00 or later | |
| Any version earlier than above | | Set the value as in the GOT-F900 (0 to 15). |

### 15.4.2 Setting Examples

This section explains the contents of the data memory (DM) set in each serial communication unit.

**1) In the case of CS1G/H-CPU**-V1**

In the CS1G/H-CPU**-V1, write the data to the channels shown in the table below using a peripheral tool.

| Setting item | Set value | Remarks |
|---|---|---|
| CS1G/H-CPU**-V1<br>DIP switch SW5 | OFF | |

| Setting item | Set value (hexadecimal) | Remarks |
|---|---|---|
| Communication<br>(RS-232C: Channel 160) | 8000H | Arbitrary setting: Provided<br>Host link mode<br>Data length: 7 bits<br>Stop bit length: 2 bits<br>Parity: Even |
| Transmission speed<br>(RS-232C: Channel 161) | 0007H | Baud rate: 19200 bps |
| Transmission delay time<br>(RS-232C: Channel 162) | 0000H | Transmission delay time: 0ms |
| Unit number<br>(RS-232C: Channel 163) | 0000 to 001FH | CST control: Not provided<br>Host link unit number: 00 to 1FH |

**2) In the case of CS1W-SCB21 and CS1W-SCB41**

In the CS1W-SCB21 and CS1W-SCB41, write the data to the data memory (DM) shown in the table below using a peripheral tool.

| Setting item | | | Set value (hexadecimal) | Remarks |
|---|---|---|---|---|
| Setting item | Port 1 | Port 2 | | |
| Communication | DM32000 | DM32010 | 8000H | Arbitrary setting: Provided<br>Host link mode<br>Data length: 7 bits<br>Stop bit length: 2 bits<br>Parity: Even |
| Transmission speed | DM32001 | DM32011 | 0007H | Baud rate: 19200bps |
| Transmission delay time | DM32002 | DM32012 | 0000H | Transmission delay time: 0ms |
| Unit number | DM32003 | DM32013 | 0000 to 001FH | CST control: Not provided<br>Host link unit number: 00 to 1FH |

When connecting the GOT-F900 to the port 2 (RS-422) of the CS1W-SCB41, set the following.

| Setting item | Set value | Remarks |
|---|---|---|
| CS1W-SCB41<br>DIP switch | 4-wire type<br>(without terminal resistor) | Refer to the description on the switches of the CS1W-SCB41. |

**3) In the case of CS1W-SCU21**

In the CS1W-SUC21, write the data to the data memory (DM) shown in the table below using a peripheral tool.
The data memory (DM) number to be written is a multiple of the unit number (0 to 16) as shown below.

| Port | Calculation expression | Remarks |
|---|---|---|
| 1 | DM3000 + 100 × Unit number | "Unit number" is a number of 0 to 16. |
| 2 | DM3000 + 100 × Unit number + 10 | |

Example: When the unit number is set to "5"

Write the following set values.
Port 1: DM3000 + 100 × 5 = DM3500
Port 2: DM3000 + 100 × 5 + 10 = DM3510

The table below shows the data memory (DM) number and the set value when the unit number is set to "00"

| Setting item | | | Set value (hexadecimal) | Remarks |
|---|---|---|---|---|
| Setting item | Port 1 | Port 2 | | |
| Communication | DM30000 | DM30010 | 8000H | Arbitrary setting: Provided<br>Host link mode<br>Data length: 7 bits<br>Stop bit length: 2 bits<br>Parity: Even |
| Transmission speed | DM30001 | DM30011 | 0007H | Baud rate: 19200 bps |
| Transmission delay time | DM30002 | DM30012 | 0000H | Transmission delay time: 0ms |
| Unit number | DM30003 | DM30013 | 0000 to 001FH | CST control: Not provided<br>Host link unit number: 00 to 1FH |

## 15.5 Caution on Use of SYSMAC C Series PLC

When using the GOT-F900 connected to the SYSMAC C Series PLC, observe the following caution on use.

### 15.5.1 Modes in the SYSMAC C Series PLC

When the GOT-F900 is connected to the SYSMAC C Series PLC and the current value and the set value of each device of the SYSMAC C Series PLC are changed, the PLC should be set to the monitor mode.
If the SYSMAC C Series PLC is started up in the running mode, the GOT-F900 sets automatically the PLC to the monitor mode.

| Mode of PLC at startup | Operation of GOT |
|---|---|
| Running mode | The GOT-F900 changes over the PLC from the running mode to the monitor mode to enable data change. |
| Monitor mode | The PLC remains in the monitor mode, and data change is enabled. |
| Program mode | The PLC remains in the program mode, and data change is enabled. |

### 15.5.2 Forced ON/OFF on the device monitor screen of the GOT-F900

The bit device ON/OFF function is provided on the user screen of the GOT-F00 and the forced ON/OFF function is provided on the device monitor screen in the HPP mode. These functions are also available when the SYSMAC C Series PLC is connected as the host unit.
Have in mind that these ON/OFF functions offer the following operation in the SYSMAC C Series PLC.
The forced setting/resetting function in the SYSMAC C Series PLC holds the current ON/OFF status without regard to the sequence program. However, when using the forced ON/OFF function described here, the set/reset status of all the bit devices are released by turning ON/OFF the specified bit.
ON/OFF operation in the sequence program is valid after operating the forced ON/OFF in the GOT-F900.

| GOT-F900 | SYSMAC C Series | Operation |
|---|---|---|
| Forced OFF (RST) | Data OFF specification | Turn OFF the contact. Can be changed by sequence program. |
| Forced ON (SET) | Data ON specification | Turn ON the contact. Can be changed by sequence program. |
| – | Forced reset specification | Turn OFF the contact. Cannot be changed by sequence program. |
| – | Forced set specification | Turn ON the contact. Cannot be changed by sequence program. |
| – | Forced set/reset release | Forced status of all the contacts released. Can be changed by the sequence program after the release. |

In the following version of the GOT, when the forced ON/OFF is operated, only the bit forcedly turned ON/OFF is released.

| GOT-F900 | F930GOT | F930GOT-K | F940GOT | F940WGOT | Handy GOT |
|---|---|---|---|---|---|
| Compatible version | 4.40 | 4.60 | 6.40 | 1.40 | 6.40 |

### 15.5.3 Restriction in functions

In host link connection, the following functions of the GOT-F900 are disabled or restricted.

- The switch function of the GOT-F900 (which sets a bit to ON or OFF) uses the host link FK command (which sets/resets multi points forcedly).
- Set values of the timer (T) and the counter (T) cannot be monitored or changed.

## 15.6 Setting of Connected Equipment for GOT

The SYSMAC C Series PLC connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

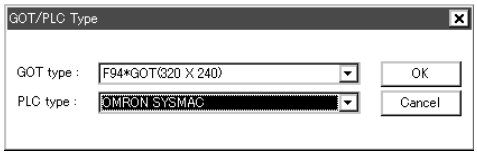
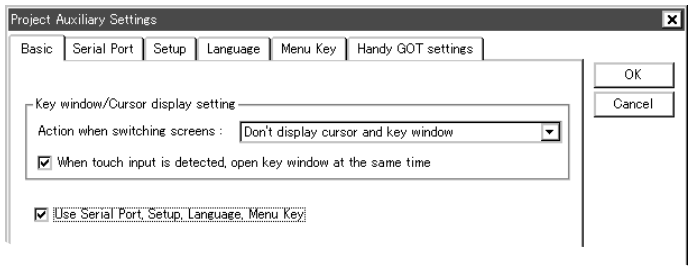
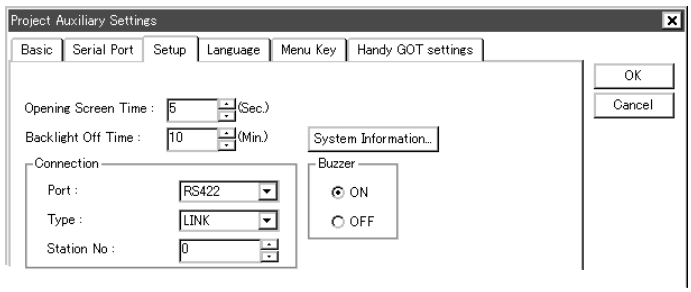
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:OMRON C SERIES<br>CONNECTION:LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: OMRON C SERIES<br>CONNECTION:LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

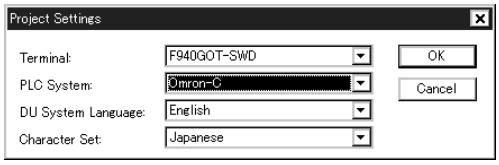
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

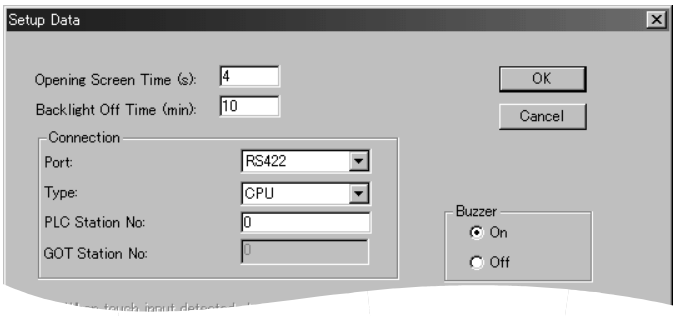
### 2) GT Designer

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) Open GT Designer.<br><br>b) Click the [New] button.<br>  <br><br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>PLC type: OMRON SYSMAC<br>Selection of "GOT type"<br>**GOT type** / **Model name**<br>F940WGOT(480×234)<WIDE> / F940WGOT<br>F94*GOT(320×240) / F940GOT, Handy GOT<br>F93*GOT(240×80) / F930GOT-K, F930GOT<br>Click [OK].<br>d) Set link connection (RS-422/RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br>  <br><br>Click the "Setup" tab.<br>  <br><br>In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : LINK<br>DST Station No. (Station No.) : 00 to 31<br>GOT Station No. (–) : – | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

| Operation | | Display (screen name) |
|---|---|---|
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br><br><br>The "GOT/PLC Type" dialog box appears. |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br><br>b) On the menu, select "File"-"New".<br> 

c) Set the following.<br>Terminal: F940WGOT-TWD (V), (H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: Omron-C<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V), (H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set link connection (RS-422/RS-232C) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

e) Set the following.<br>Port: RS-422<br>RS-232C<br>Type: LINK<br>DST Station No. (Station No.): 0 to 31<br>GOT Station No. (–) : –</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.</td><td>The "Open" dialog box appears.</td></tr>
</table>

## 15.7 Cable Diagram

This section explains cable connection diagrams to connect the GOT-F900 and the SYSMAC C Series PLC manufactured by Omron.

**1) Cable for the GOT and the SYSMAC C Series PLC**

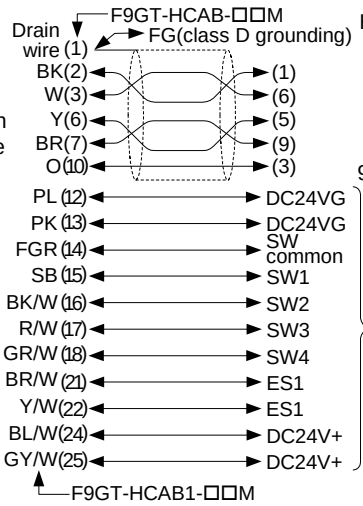
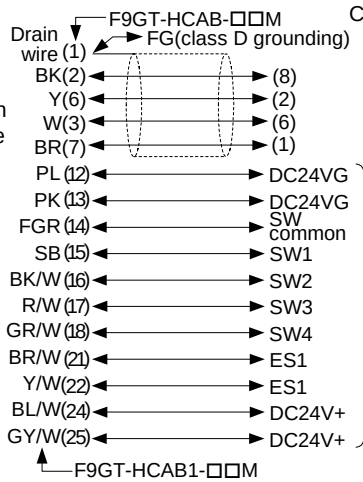
: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | SYSMAC C Series<br>C200H-LK202-V1<br>Prepared by the user | RS-422 connection | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male<br>FG(class D grounding) (1) (6) (2) (7) (5)<br>FG(class D grounding) (1) (6) (5) (9) (3) | Host link unit side (C200H side)<br>1 5<br>6 9<br>9-pin D-Sub, male |
| b) | CS1W-SCB41<br>Prepared by the user | RS-422 connection | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male<br>(1) (2) (6) (7)<br>FG(class D grounding) (8) (2) (6) (1) | Communication unit (CS1 side)<br>1 5<br>6 9<br>9-pin D-Sub, male |
| c) | C200H-LK201-V1<br>Prepared by the user | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female<br>FG(class D grounding) (1) (2) (3) (7) (8) (5)<br>FG(class D grounding) (1) (2) (3) (4) (5) (7) | Host link unit side (C200H side)<br>1 13<br>14 25<br>25-pin D-Sub, male |
| d) | CQM1 CPU<br>Prepared by the user | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female<br>FG(class D grounding) (1) (2) (3) (7) (8) (5)<br>FG(class D grounding) (1) (2) (3) (4) (5) (9) | CQM1 side (COM port)<br>1 5<br>6 9<br>9-pin D-Sub, male |
| e) | CS1W-SCB41<br>CS1W-SCB21<br>CS1W-SCU21<br>CS1G/H-CPU**-V1<br>Prepared by the user | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female<br>FG(class D grounding) (2) (3) (5) (7) (8)<br>FG (class D grounding) (2) (3) (9) (4) (5) | Communication board/ Communication unit (CS1 side)<br>1 5<br>6 9<br>9-pin D-Sub, male |

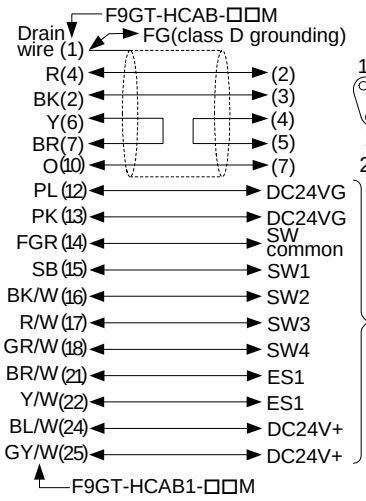
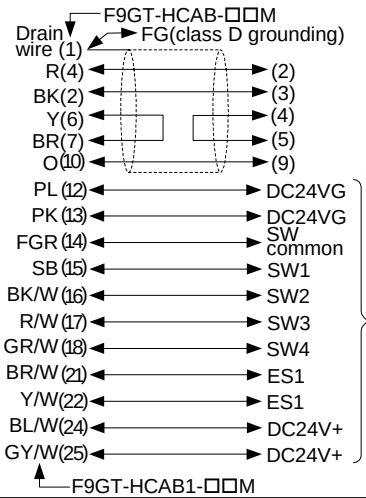
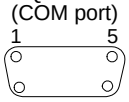
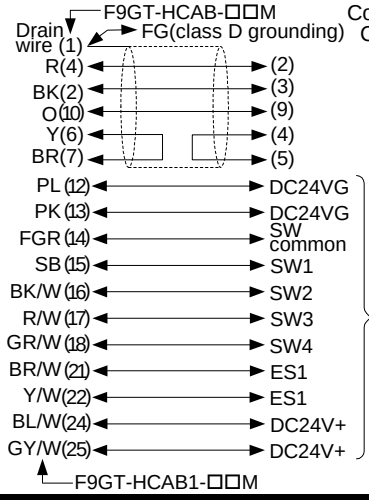
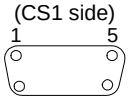
### 2) Cable for the Handy GOT and the SYSMAC C Series PLC

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side. | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side. | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | SYSMAC C Series<br>C200H-LK202-V1<br>Prepared by the user | RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Host link unit side (C200H side)<br>1 5<br>6 9<br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | CS1W-SCB41<br>Prepared by the user | RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Communication unit (CS1 side)<br>1 5<br>6 9<br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | C200H-LK201-V1<br>Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Host link unit side (C200H side)<br> <br>25-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| f) | CQM1 CPU<br>Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | CQM1 side (COM port)<br>  <br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| g) | CS1W-SCB41<br>CS1W-SCB21<br>CS1W-SCU21<br>CS1G/H-CPU**-V1<br>Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Communication board/ Communication unit (CS1 side)<br>  <br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 15.8 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the SYSMAC C Series PLC manufactured by Omron.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the SYSMAC C Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the SYSMAC C Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the SYSMAC C Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the SYSMAC C Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the SYSMAC C Series PLC was referenced. (Example: While an C200H is connected, a device exists only in the CS1 is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected SYSMAC C Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the SYSMAC C Series PLC was referenced. (Example: While an C200H is connected, a device exists only in the CS1 is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected SYSMAC C Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A SYSMAC C Series PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# MEMO

# 16. Connection of FLEX-PC N Series PLC (Manufactured by Fuji Electric)

This chapter explains the procedure to connect the GOT-F900 Series display unit to the FLEX-PC N Series PLC manufactured by Fuji Electric.

**Connection Procedure**

This section introduces the procedure to connect the GOT-F900 to the FLEX-PC N Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 16.1 |
| System Configuration | You can select the configuration between the GOT and the FLEX-PC N Series PLC and proper cables. | 16.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting in Link Unit | You can learn the communication specifications and the contents of setting.<br>Communication Setting Specifications: The communication specifications between the link unit and the GOT unit (16.3.1)<br>Setting Examples: The contents and position of setting in each link unit (16.3.2) | 16.3 |
| Caution on Use of FLEX-PC N Series PLC | You can learn the restrictions in connecting the GOT to the FLEX-PC N Series PLC. | 16.4 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 16.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for FLEX-PC N Series PLC/GOT connection | 16.7 |
| Troubleshooting | Description of errors and how to fix them | 16.8 |

## 16.1 System Condition

When connecting the FLEX-PC N Series PLC, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting FLEX-PC N Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | ✓ | ✓ | – | 1.00 | Not applicable | 2.20 |
| F930GOT-K | ✓ | ✓ | ✓ | – | 4.60 | Not applicable | 2.70 |
| F940GOT | ✓ | ✓ | ✓ | – | 1.00 | Not applicable | 2.00 |
| F940WGOT | ✓ | ✓ | ✓ | – | 1.00 | Not applicable | 2.50 |
| F940 Handy GOT | ✓ | – | ✓ | – | 1.00 | Not applicable | 2.10 |
| F943 Handy GOT | – | ✓ | ✓ | – | 1.00 | Not applicable | 2.10 |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

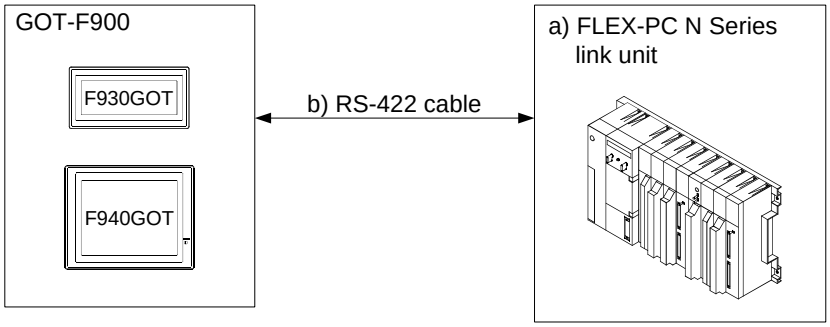
## 16.2 System Configuration

The FLEX-PC N Series PLC can be connected to the GOT via RS-422 or RS-232C using a link unit. This section explains the cables and options required to connect the FLEX-PC N Series PLC.

### 16.2.1 Configuration for Link Unit Connection (RS-422)

The GOT-F900 and the link unit can be connected on the 1:1 basis.
As many GOT-F900 units as the number of link units attached to the FLEX-PC N Series PLC can be connected.

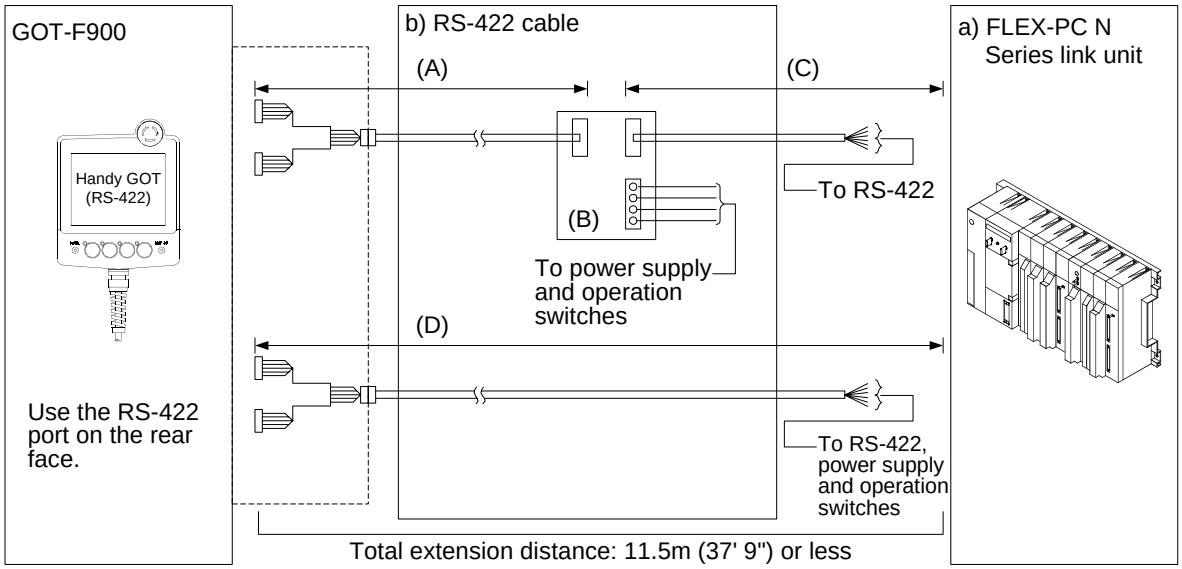
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) FLEX-PC N Series | | b) RS-422 cable | Remarks |
|---|---|---|---|
| NB-RS1-AC<br>NB-RS1-DC<br>NJ-RS4<br>NS-RS1 | Terminal block | Prepared by the user | |

- Applicable FLEX-PC N Series products in the column a) are link units equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



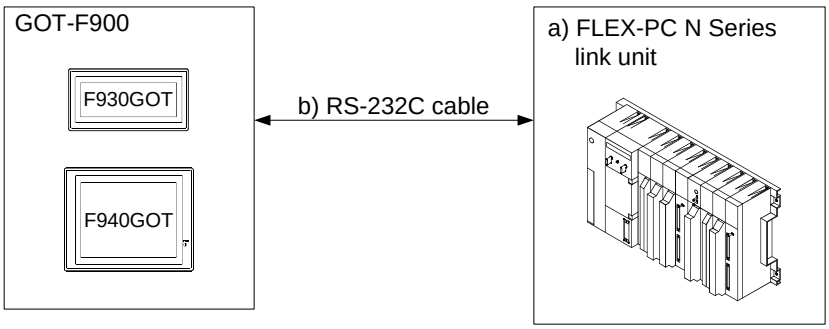

| a) FLEX-PC N Series | | b) RS-422 cable | Remarks |
|---|---|---|---|
| NB-RS1-AC<br>NB-RS1-DC<br>NJ-RS4<br>NS-RS1 | Terminal block | (A) F9GT-HCAB-☐☐M<br>(B) F9GT-HCNB<br>(C) Prepared by the user.<br>(D) F9GT-HCAB1-☐☐M | |

- Applicable FLEX-PC N Series products in the column a) are link units equipped with built-in RS-422 interface.

### 16.2.2 Configuration for Link Unit Connection (RS-232C)

The GOT-F900 and the link unit can be connected on the 1:1 basis.
GOT-F900 units as many as the number of link units attached to the FLEX-PC N Series PLC can be connected.

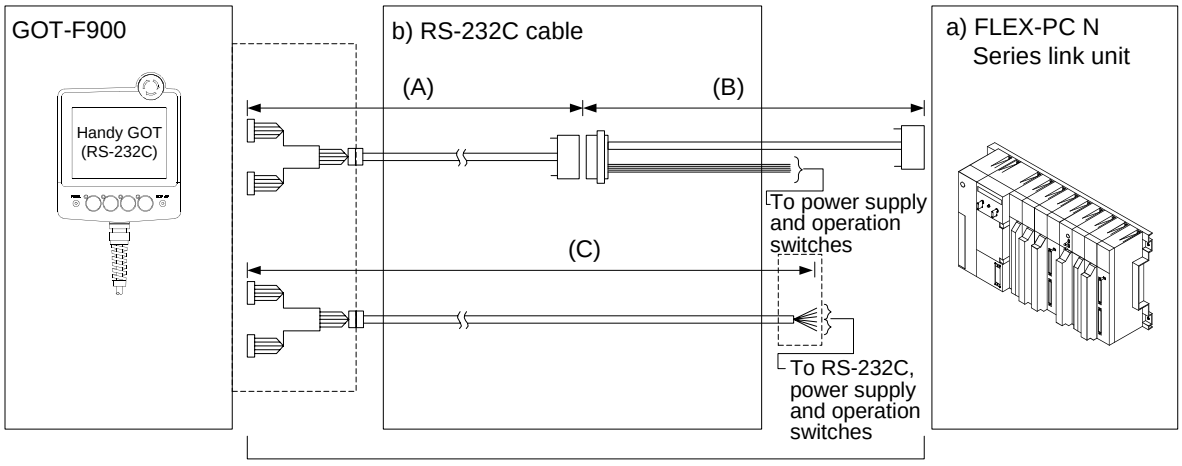
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) FLEX-PC N Series | | b) RS-232C cable | Remarks |
|---|---|---|---|
| NB-RS1-AC<br>NB-RS1-DC<br>NJ-RS2<br>NS-RS1 | 25-pin D-Sub | Prepared by the user | |
| NJ-CPU-B16 | 15-pin D-Sub | Prepared by the user | |

- Applicable FLEX-PC N Series products in the column a) are link units equipped with built-in RS-232C interface.

**2) F943 Handy GOT**




| a) FLEX-PC N Series | | b) RS-232C cable | Remarks |
|---|---|---|---|
| NB-RS1-AC<br>NB-RS1-DC<br>NJ-RS2<br>NS-RS1 | 25-pin D-Sub | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user<br>(C) F9GT-HCAB1-□□M | |
| NJ-CPU-B16 | 15-pin D-Sub | | |

- Applicable FLEX-PC N Series products in the column a) are link units equipped with built-in RS-232C interface.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 16.3 Setting in Link Unit

When connecting the link unit, the switches in the link unit should be set as described below.

### 16.3.1 Communication Setting Specifications

This section explains the setting in the link unit.

**1) Setting the mode setting switch (link connection)**

Set the mode so that the COM port of the link unit connected to the GOT-F900 is the asynchronous system and no protocol. (In the NJ-CPU-B16, the setting below is not required.)

| COM port | Set value | Remarks |
|---|---|---|
| RS-422 | 3 | Command setting type: asynchronous system, no protocol |
| RS-232C | 1 | Command setting type: asynchronous system, no protocol |

**2) Setting the transmission specifications**

Set the transmission specifications in the link unit as shown in the table below.
For the switch setting method, refer to the manual of the link unit.

| Item | | Link unit connection | | CPU direct connection |
|---|---|---|---|---|
| | | RS-422 | RS-232C | RS-232C |
| Transmission speed | | 19200 bps | | |
| Data format | Data bit | 7 bits (JIS) | | 8 bits (HEX) |
| | Parity bit | Even | | Odd |
| | Stop bit | 1 bit | | |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**3) Setting the station number setting switches (link connection)**

(In the NJ-CPU-B16, the station number cannot be set.)
The setting range varies depending on the OS version as shown in the table below.

| GOT-F900 | OS version | Setting |
|---|---|---|
| F920GOT-K | – | – |
| F930GOT | 3.00 or later | Set the value set in the GOT-F900 (0 to 31). |
| F930GOT-K | 4.60 or later | |
| F940GOT | 5.00 or later | |
| F940WGOT | 1.00 or later | |
| F940 Handy GOT | 5.00 or later | |
| F943 Handy GOT | 5.00 or later | |
| Any version earlier than above | | Set the value set in the GOT-F900 (0 to 15). |

### 16.3.2 Setting Examples

While referring to the setting examples in the link units, set the transmission specifications.
The examples below explain the setting in the NJ-CPU-B16 (link unit), the NJ-RS4 and the NJ-RS2.

**1) NJ-CPU-B16**

In the NJ-CPU-B16, use the parameter (50H) for setting.

| Parameter | Data value | Contents of setting |
|---|---|---|
| 50H | 0057H | Baud rate: 19200 bps<br>Stop bit: 1 bit<br>Character length: 8 bits<br>Parity: Odd |

**2) NJ-RS4**

In the NJ-RS4, use each switch for setting.

| Switch position | Setting item | Description | | Remarks | |
|---|---|---|---|---|---|
| Front face | Mode | MODE SW | 3 | Command setting type:<br>asynchronous system, no protocol | |
| | Station number | Station number setting SW × 10 | – | Upper digit | (Correspond to the station number in the GOT-F900.) |
| | | Station number setting SW × 1 | – | Lower digit | |
| Rear face | Terminal resistor | Selector SW 1 | ON | Receive line provided | |
| | | Selector SW 2 | ON | Transmission line provided | |
| | Communication condition | DIP.SW | 1:OFF<br>2~8:ON | Set the condition using switches:<br>19200 bps, 7 bits, 1 stop bit and even parity | |

**3) NJ-RS2**

In the NJ-RS2, use each switch for setting.

| Switch position | Setting item | Description | | Remarks |
|---|---|---|---|---|
| Rear face | Mode | MODE SW | 1 | Command setting type:<br>asynchronous system, no protocol |
| | Communication condition | DIP.SW | 1:OFF<br>2 to 8:ON | Set the condition using switches:<br>19200 bps, 7 bits, 1 stop bit and even parity |

## 16.4 Caution on Use of FLEX-PC N Series PLC

When using the GOT-F900 connected to the FLEX-PC N Series PLC, observe the following caution on use.

### 16.4.1 Devices which can be monitored

When the GOT-F900 is connected to the FLEX-PC N Series link unit, set values of the timer (T) and the counter (C) cannot be monitored.

## 16.5 Setting of Connected Equipment for GOT

The FLEX-PC N Series PLC connection parameters can be set using the GOT-F900 Series or the screen creation software DU/WIN.

**Setting the Connection Type**

Set the connection type in accordance with the connected equipment as shown in the table below. Have in mind that the NJ-CPU-B16 (link unit) requires CPU direct connection.

| Connected equipment [classification in manual] | GOT-F900 | DU/WIN | Remarks |
|---|---|---|---|
| | CONNECTION | Type | |
| [Link unit]<br>NJ-CPU-B16(RS-232C) | CPU direct connection (RS-232C) | | Executes communication as programming port |
| [Link unit]<br>NB-RS1-AC(RS-422/RS-232C)<br>NB-RS1-DC(RS-422/RS-232C)<br>NJ-RS4(RS-422)<br>NJ-RS2(RS-232C)<br>NS-RS1(RS-422/RS-232C) | Link connection (RS-422) or link connection (RS-232C) | | Executes communication as link unit |

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

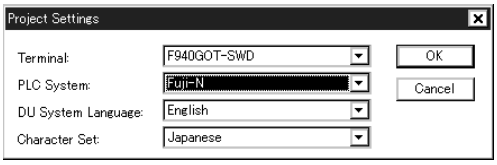
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE:FUJI N SERIES<br>CONNECTION:CPU PORT (RS-232C)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

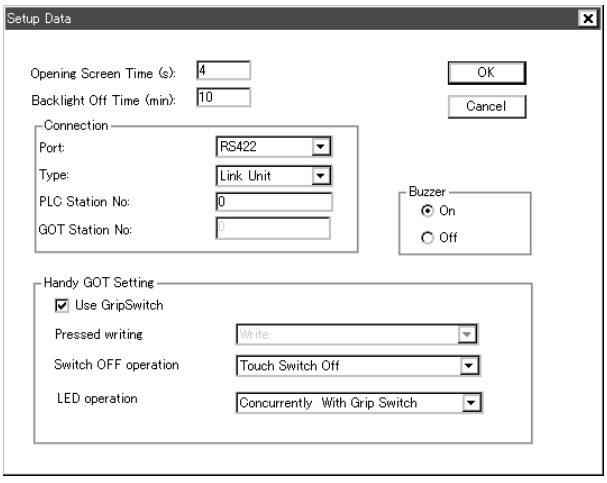
When the main menu screen change operation is enabled.

| Operation | Display (screen name) |
|---|---|
| a).Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b).Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c).Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: FUJI N SERIES<br>CONNECTION:CPU PORT (RS-232C)<br>LINK PORT (RS-422)<br>LINK PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open DU/WIN.<br><br>b) On the menu, select "File"-"New".<br> 

c) Set the following.<br>Terminal: F940WGOT-TWD(V)(H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: Fuji-N<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set CPU direct connection (RS-232C) or link connection (RS-422/RS-232C) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 
</td><td>The "Project settings" dialog box appears.</td></tr>
</table>

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td></td><td>e) Set the following.<br>Port: RS-422<br>RS-232C<br>Type: CPU<br>LINK<br>DST Station No. (Station No.) : 0 to 31<br>GOT Station No. (–) : –<br><br>Combinations of "Port" and "Type" are as follows.
<table>
<tr><th>Connection destination</th><th>Port</th><th>Type</th></tr>
<tr><td>NB-RS1-AC(RS-422/RS-232C)<br>NB-RS1-DC(RS-422/RS-232C)<br>NJ-RS4(RS-422)<br>NJ-RS2(RS-232C)<br>NS-RS1(RS-422/RS-232C)</td><td>RS-422/<br>RS-232C</td><td>LINK</td></tr>
<tr><td>NJ-CPU-B16(RS-232C)</td><td>RS-232C</td><td>CPU</td></tr>
</table></td><td>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.</td><td><br><br>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

## 16.6 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the FLEX-PC N Series PLC manufactured by Fuji Electric.

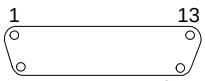
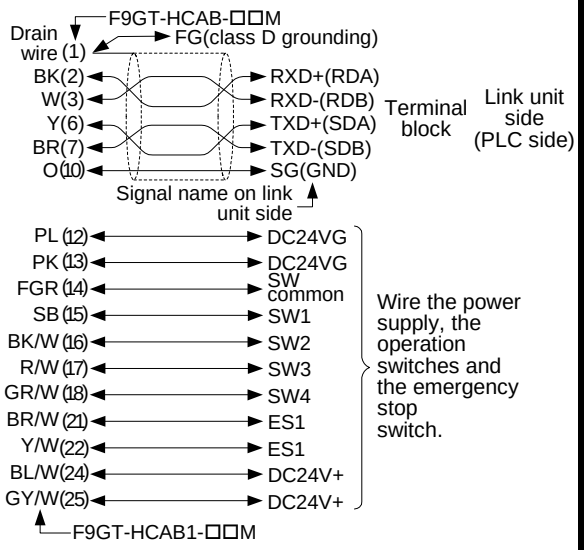
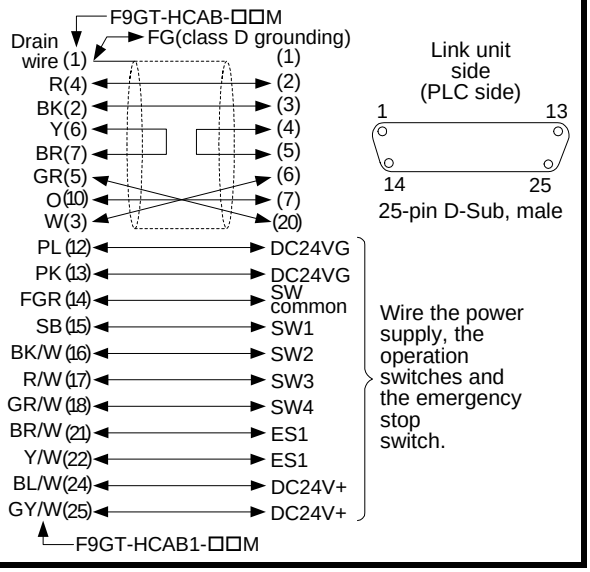
### 1) Cable for the GOT and the FLEX-PC N Series PLC manufactured by Fuji Electric

: Female type : Male type The connector figure shows the engagement face.

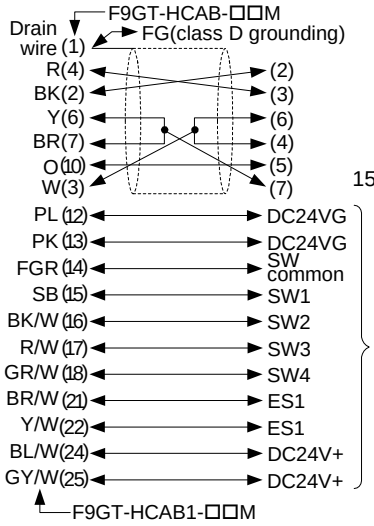
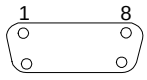
| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>FLEX-PC N Series<br>Prepared by the user | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | FG(class D grounding) → FG(class D grounding)<br>(1) → RXD+(RDA)<br>(6) → RXD-(RDB)<br>(2) → TXD+(SDA)<br>(7) → TXD-(SDB)<br>(5) → SG(GND)<br>Signal name on link unit side | Terminal block<br>Link unit side (PLC side) |
| b) | RS-232C connection<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding) → FG(class D grounding)<br>(1)→(1)<br>(2)→(2)<br>(3)→(3)<br>(7)→(4)<br>(8)→(5)<br>(6)→(6)<br>(5)→(7)<br>(4)→(20) | Link unit side (PLC side)<br>1 13<br>14 25<br>25-pin D-Sub, male |
| c) | RS-232C connection<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding) → FG(class D grounding)<br>(2)→(2)<br>(3)→(3)<br>(7)→(4)<br>(8)→(5)<br>(5)→(7) | PLC side<br>1 8<br>9 15<br>15-pin D-Sub, male |

### 2) Cable for the Handy GOT and the FLEX-PC N Series PLC manufactured by Fuji Electric

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>  <br><br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | FLEX-PC N Series<br>Prepared by the user<br>RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  <br> |
| d) | Prepared by the user<br>RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  <br> |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | Prepared by the user | RS-232C connection<br>To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | PLC side<br>  <br>15-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 16.7 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FLEX-PC N Series PLC.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the FLEX-PC N Series PLC is turned off.<br>• Cause<br>Communication is disabled because the power of the FLEX-PC N Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the FLEX-PC N Series PLC.<br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the FLEX-PC N Series PLC was tried.<br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the FLEX-PC N Series PLC was referenced.<br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected FLEX-PC N Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the FLEX-PC N Series PLC was referenced.<br><br>• Cause<br>On the head screen, a nonexistent device in the connected FLEX-PC N Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

**2) Software**

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A FLEX-PC N Series PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# 17. Connection of Machine Controller CP9200SH (PLC Manufactured by Yaskawa Electric)

This chapter explains the procedure to connect the GOT-F900 Series display unit to the MP900/CP9200SH machine controller.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the MP900/CP9200SH machine controller.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 17.1 |
| System Configuration | You can select the configuration between the GOT and the machine controller MP900/CP9200SH and proper cables. | 17.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Setting in Machine Controller | You can learn the communication specifications and the contents of setting.<br>Communication Setting Specifications: The communication specifications set in the machine controller. (17.3.1) | 17.3 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 17.4 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for Machine controller/GOT connection | 17.5 |
| Troubleshooting | Description of errors and how to fix them | 17.6 |

## 17.1 System Condition

When connecting the machine controller MP900/CP9200SH, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting Machine Controller CP9200SH

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | ✓ | ✓ | ✓ | – | 3.00 | SW4-F | – |
| F930GOT-K | ✓ | ✓ | ✓ | – | 4.60 | SW5-26C | – |
| F940GOT | ✓ | ✓ | ✓ | – | 5.00 | SW4-F | – |
| F940WGOT | ✓ | ✓ | ✓ | – | 1.00 | SW5-F | – |
| F940 Handy GOT | ✓ | – | ✓ | – | 5.00 | SW4-F | – |
| F943 Handy GOT | – | ✓ | ✓ | – | 5.00 | SW4-F | – |

- The screen creation software version corresponds to connection of the machine controller CP9200SH. Refer to section 3.2.

## 17.2 System Configuration

The MP900/CP9200SH machine controller can be directly connected to the GOT via RS-422 or RS-232C. This section explains the cables and options required in such a system.

**Connectable Model and Connector Shape**

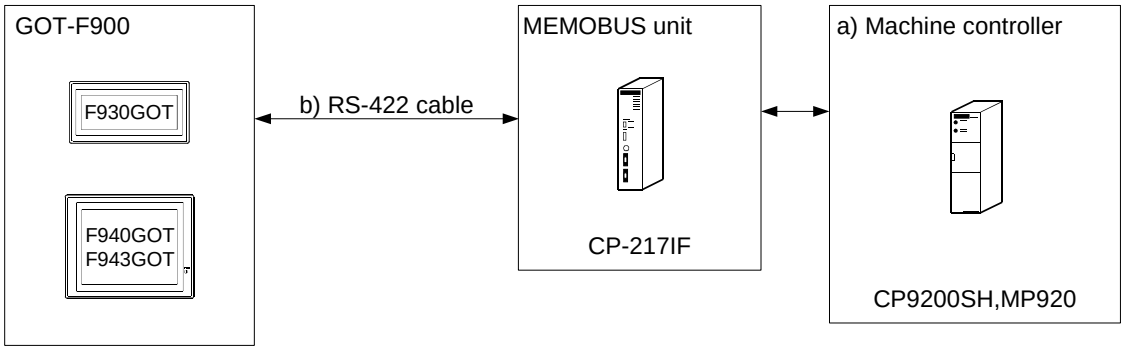
The table below shows applicable models and their connector shape.

| Machine controller | | | | GOT | Remarks |
|---|---|---|---|---|---|
| Model | Unit | Port | | Connector shape | |
| CP9200SH | CP-217IF | CN1 | RS-232C | 9-pin D-Sub, male | |
| | | CN2 | RS-232C | 25-pin D-Sub, male | |
| | | CN3 | RS-422 | 8-pin connector, male | |
| MP920 | CPU equipped with built-in ports | PORT1 | RS-232C | 9-pin D-Sub, male | |
| | | PORT2 | RS-232C | 9-pin D-Sub, male | |
| | CP-217IF | CN1 | RS-232C | 9-pin D-Sub, male | |
| | | CN2 | RS-232C | 9-pin D-Sub, male | |
| | | CN3 | RS-422 | 8-pin connector, male | |
| MP930 | CPU equipped with built-in ports | PORT1 | RS-232C | 9-pin D-Sub, male | |
| | | PORT2 | RS-232C | 9-pin D-Sub, male | |

### 17.2.1 Configuration for CPU Direct Connection (RS-422)

Connect the MP900/CP9200SH machine controller to the COM port of the MEMOBUS unit and the RS-422 communication port of the GOT.
The GOT-F900 and the machine controller can be connected on the 1:1 basis.
As many GOT-F900 units as the number of MEMOBUS units attached to the machine controller can be connected.

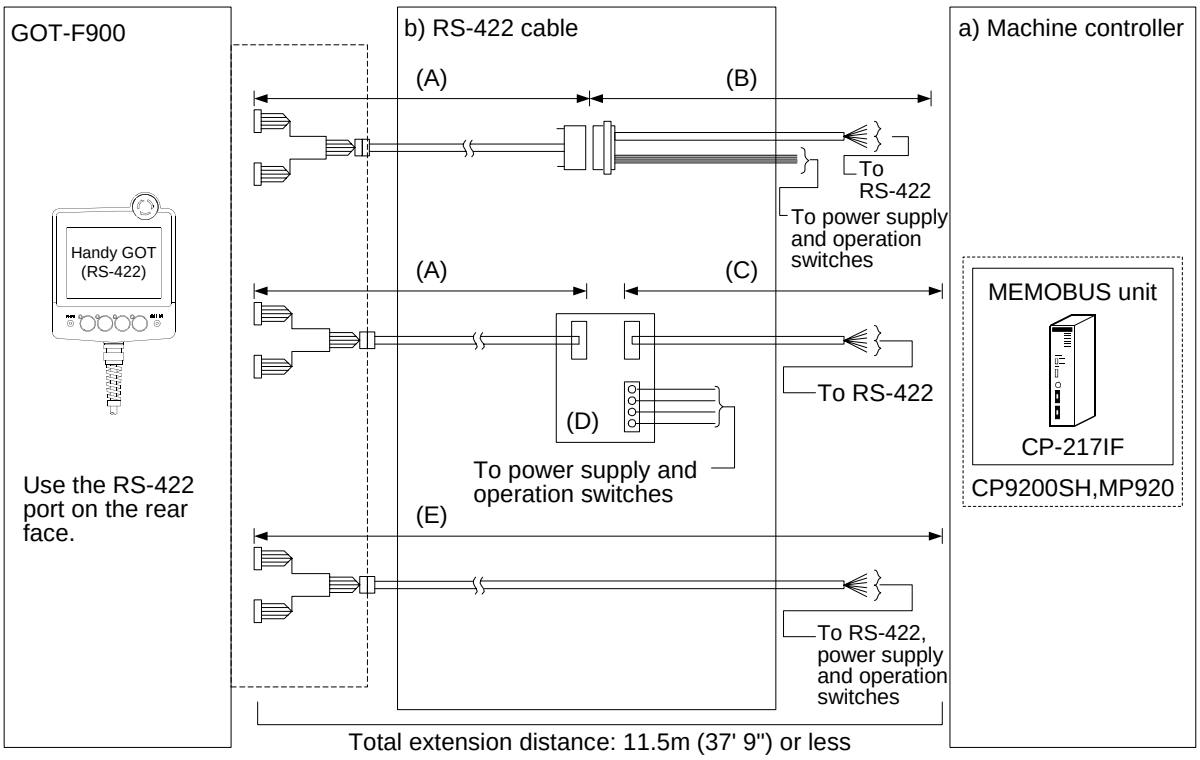
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) Machine controller | | b) RS-422 cable | Remarks |
|---|---|---|---|
| CP-217IF | Dedicated 8-pin connector | Prepared by the user | MEMOBUS unit |

- Applicable machine controller product in the column a) is a MEMOBUS unit equipped with built-in RS-422 interface.

### 2) F940 Handy GOT



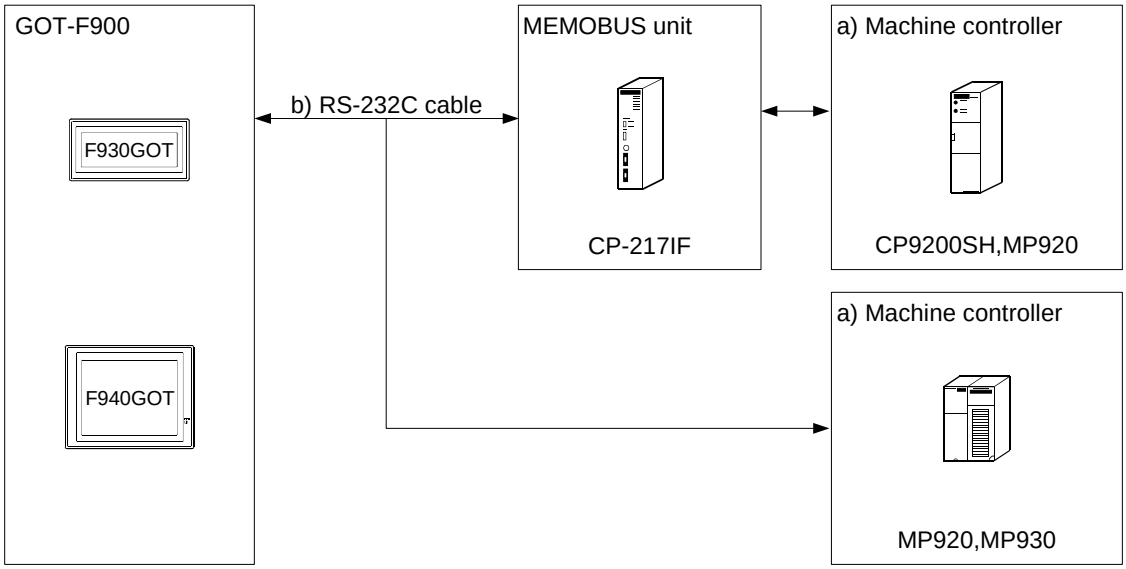

| a) Machine controller | | b) RS-422 cable | Remarks |
|---|---|---|---|
| CP-217IF | Dedicated 8-pin connector | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user<br>(C) Prepared by the user<br>(D) F9GT-HCNB<br>(E) F9GT-HCAB1-□□M | MEMOBUS unit |

- Applicable machine controller product in the column a) is a MEMOBUS unit equipped with built-in RS-422 interface.

### 17.2.2 Configuration for CPU Direct Connection (RS-232C)

Connect the MP900/CP9200SH machine controller to the MEMOBUS port built in the CPU unit or the COM port of the MEMOBUS unit and the RS-232C communication port of the GOT.
The GOT-F900 and the machine controller can be connected on the 1:1 basis.
As many GOT-F900 units as the number of MEMOBUS units attached to the machine controller can be connected.

**1) F930GOT/F930GOT--K/F940GOT/F940WGOT**

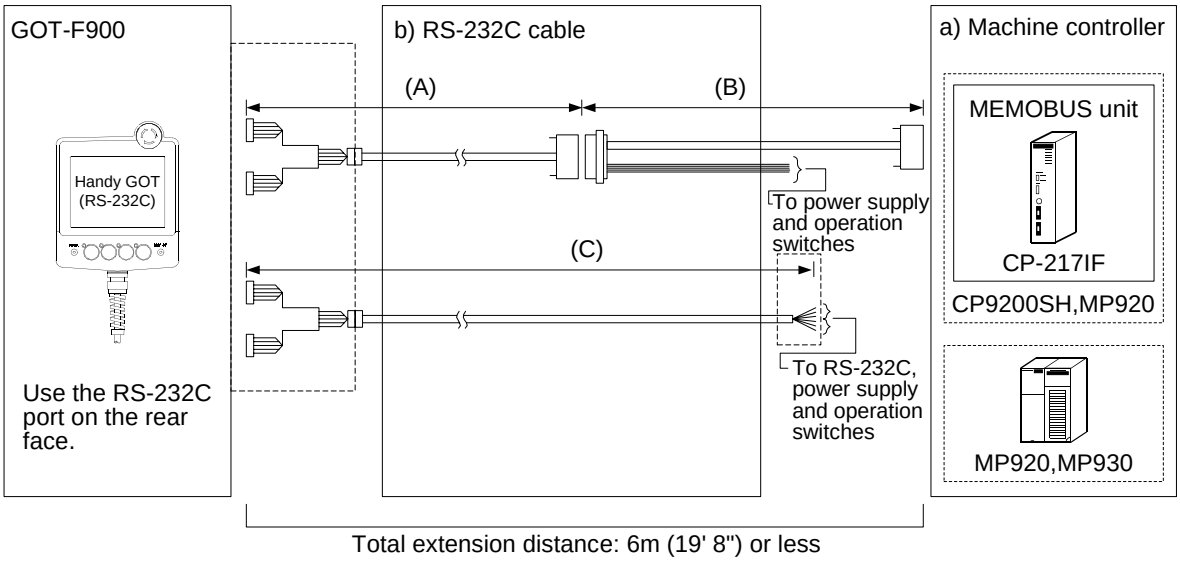



| a) Machine controller | | b) RS-232C cable | Remarks |
|---|---|---|---|
| CP-217IF | 9-pin D-Sub *1<br>25-pin D-Sub | (A) F9GT-HCAB-□□M | MEMOBUS unit |
| MP920<br>MP930 | 9-pin D-Sub | (B) Prepared by the user<br>(C) F9GT-HCAB1-□□M | CPU unit |

- Applicable machine controller products in the column a) are CPU or MEMOBUS units equipped with built-in RS-232C interface.

*1 In the CP-217IF, the COM1 is the 9-pin D-Sub port and the COM2 is the 25-pin D-Sub port. (The COM3 is an RS-422 port.)

### 2) F943 Handy GOT




| a) Machine controller | | b) RS-232C cable | Remarks |
|---|---|---|---|
| CP-217IF | 9-pin D-Sub*1<br>25-pin D-Sub | (A) F9GT-HCAB-3M<br>(B) Prepared by the user<br>(C) F9GT-HCAB1-□□M | MEMOBUS unit |
| MP920<br>MP930 | 9-pin D-Sub | | CPU unit |

- Applicable machine controller products in the column a) are CPU or MEMOBUS units equipped with built-in RS-232C interface.

*1 In the CP-217IF, the COM1 is the 9-pin D-Sub port and the COM2 is the 25-pin D-Sub port. (The COM3 is an RS-422 port.)

## 17.3 Setting in Machine Controller

When connecting the MP900/CP9200SH machine controller, the communication setting of the MEMOBUS port should be changed using peripheral equipment.

### 17.3.1 Communication Setting Specifications

**1) Setting the transmission specifications**

Set the transmission specifications in the MP900/CP9200SH machine controller as shown in the table below. For the setting method, refer to the manual of the machine controller.

| Item | | Set value |
|---|---|---|
| Protocol | | MEMOBUS |
| Mode | | RTU |
| Slave address | | 1 to 16 |
| Transmission speed | | 19200 bps |
| Data format | Data bit | 8 bits |
| | Parity bit | Provided (even) |
| | Stop bit | 1 bit |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting the slave address (station number) setting switch**

The slave address is regarded as the station number in the GOT-F900.
Align the slave address setting switch to the value (1 to 16) set in the GOT-F900.
If the station number of the GOT-F900 is set to "00", it is treated as "01".

## 17.4 Setting of Connected Equipment for GOT

The machine controller MP900/CP9200SH connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

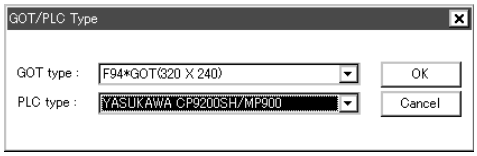
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br><br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE".<br>c) Set the following.<br>PLC TYPE:YASKAWA CP9200SH<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #) : 01 to 16 ("00" is treated as "01".)<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

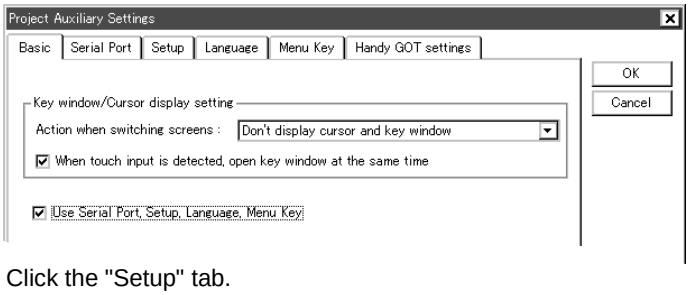
When the main menu screen change operation is enabled.

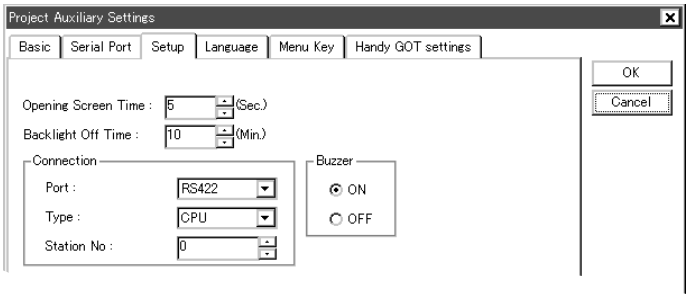
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE".<br>e) Set the following.<br>PLC TYPE: YASKAWA CP9200SH<br>CONNECTION:CPU PORT (RS-422)<br>CPU PORT (RS-232C)<br>DST STATION # (STATION #) : 01 to 16 ("00" is treated as "01".)<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open GT Designer.<br><br>
b) Click the [New] button.<br>


<br>
c) Set the following.<br>
GOT type: F940WGOT (480 × 234) <WIDE><br>
F94*GOT (320 × 240)<br>
F93*GOT (240 × 80)<br>
PLC type: YASKAWA CP9200SH/MP900<br>
Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
</table>
Click [OK].<br><br>
d) Set CPU direct connection (RS-422/RS-232C) of the GOT-F900.<br>
This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>
Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br>


<br>
Click the "Setup" tab.<br>


</td><td>
The "Select Project" dialog box appears.<br><br>
The "GOT/PLC Type" dialog box appears.<br><br>
The "Project Auxiliary Settings" dialog box appears.
</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| | In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-422<br>RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 01 to 16 ("00" is treated as "01".)<br>GOT Station No. (–) : – | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

## 17.5 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the MP900/CP9200SH machine controller.

**1) Cable for the GOT and the machine controller**

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>Machine controller CP-217IF<br>Prepared by the user | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | FG(class D grounding) → FG(class D grounding)<br>(1) → RXD+(RDA)<br>(6) → RXD-(RDB)<br>(2) → TXD+(SDA)<br>(7) → TXD-(SDB)<br>Signal name of MEMOBUS port | CP-217IF MEMOBUS unit<br>③ ⑤ ⑧<br>② ⑦<br>① ④ ⑥<br>8-pin, male |
| b) | RS-232C connection<br>Machine controller CP-217IF<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(2) → (2) SD(TXD)<br>(3) → (3) RD(RXD)<br>(7) → (4) RS(RTS)<br>(8) → (5) CS(CTS)<br>(6) → (6) DR(DSR)<br>(5) → (7) SG(GND)<br>(8) CD(DCD)<br>(4) → (20) ER(DTR)<br>Signal name of MEMOBUS port | CP-217IF MEMOBUS unit CN2<br>1 13<br>14 25<br>25-pin D-Sub, male |
| c) | RS-232C connection<br>MP920,MP930,CP-217IF<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(2) → (2) SD(TXD)<br>(3) → (3) RD(RXD)<br>(4) → (4) RS(RTS)<br>(5) → (5) CS(CTS)<br>(6) → (6) DR(DSR)<br>(7) → (7) SG(GND)<br>(8)<br>(9) ER(DTR)<br>Signal name of MEMOBUS port | MEMOBUS unit CPU unit<br>1 5<br>6 9<br>9-pin D-Sub, male |

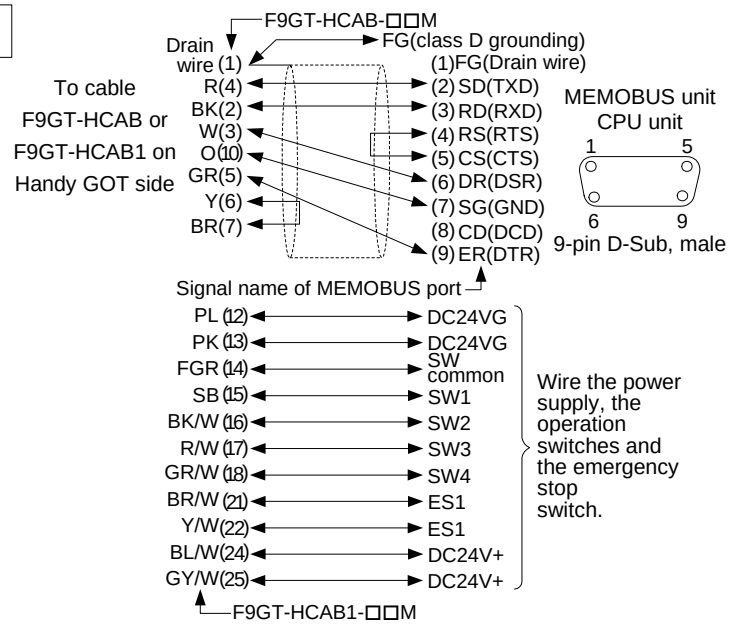
### 2) Cable for the Handy GOT and the machine controller

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Untied cable |
| c) | Machine controller CP-217IF<br>Prepared by the user | RS-422 connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>BK(2) (2)RXD+(RDA)<br>W(3) (1)RXD-(RDB)<br>Y(6) (7)TXD+(SDA)<br>BR(7) (6)TXD-(SDB)<br>Signal name of MEMOBUS port<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M<br>Wire the power supply, the operation switches and the emergency stop switch. | CP-217IF MEMOBUS unit<br>8-pin, male |
| d) | Machine controller CP-217IF<br>Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>(1)FG(Drain wire)<br>R(4) (2)SD(TXD)<br>BK(2) (3)RD(RXD)<br>Y(6) (4)RS(RTS)<br>BR(7) (5)CS(CTS)<br>GR(5) (6)DR(DSR)<br>O(10) (7)SG(GND)<br>(8)CD(DCD)<br>W(3) (20)ER(DTR)<br>Signal name of MEMOBUS port<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M<br>Wire the power supply, the operation switches and the emergency stop switch. | CP-217IF MEMOBUS unit CN2<br>1 13<br>14 25<br>25-pin D-Sub, male |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | MP920, MP930, CP-217IF<br>Prepared by the user | RS-232C connection |  | |

## 17.6 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the MP900/CP9200SH machine controller.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the machine controller is turned off.<br><br>• Cause<br>Communication is disabled because the power of the machine controller is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the machine controller.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the machine controller was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the machine controller was referenced. (Example: While a MP900 is connected, a device exists only in the CP9200SH is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected machine controller is specified.<br>• Countermeasures<br>Check devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the machine controller was referenced. (Example: While a MP900 is connected, a device exists only in the CP9200SH is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected machine controller is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A machine controller, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set o bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# MEMO

# 18. Connection of FP Series PLC (Manufactured by Matsushita Electric Works)

This chapter explains connection of the GOT-F900 Series display unit to the FP Series PLC manufactured by Matsushita Electric Works.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the FP Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 18.1 |
| System Configuration | You can select the configuration between the GOT and the FP Series PLC and proper cables. | 18.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| FP Selection | You can learn the communication specifications and the contents of setting.<br>Communication Setting Specifications — The communication specifications between the FP Series PLC and the GOT unit. — 18.3.1<br>Setting Examples — The contents and position of setting in each FP Series PLC. — 18.3.2 | 18.3 |
| Cautions on Use of FP Series | You can learn the restrictions in connecting the GOT to the FP Series PLC. | 18.4 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | 18.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for FP Series PLC/GOT connection | 18.6 |
| Troubleshooting | Description of errors and how to fix them | 18.7 |

## 18.1 System Condition

When connecting the FP Series PLC, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting FP Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | – | ✓ | ✓ | – | 4.10 | SW5-K | 2.60 |
| F930GOT-K | – | ✓ | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | ✓ | – | 6.10 | SW5-K | 2.60 |
| F940WGOT | – | ✓ | ✓ | – | 1.10 | SW5-K | 2.60 |
| F940 Handy GOT | – | – | It cannot be connected. (Select the F943 Handy GOT.) | | | | |
| F943 Handy GOT | – | ✓ | ✓ | – | 6.10 | SW5-K | 2.60 |

- The screen creation software version corresponds to the model of the GOT-F900 Series. Refer to section 3.2.

*1 Though RS-422 can be selected in the GOT-F900 and the screen creation software, FP Series products which can be connected to the GOT are not equipped with RS-422 interface.

### 18.1.1 Classification of Product Names

PLC CPU names are classified by the series as shown in the table below.
For the product model name and the built-in interface specifications corresponding to each series name mentioned here, refer to catalogs offered by Matsushita Electric Works.

| Name | Series name | Built-in interface |
|---|---|---|
| Control unit | FP0 Series PLC | Tool port<br>COM port (which is not built in some models) |
| CPU unit | FP2SH Series PLC | Tool port<br>COM port |
| Computer communication unit | FP2SH Series CCU | COM port × 2 channels |

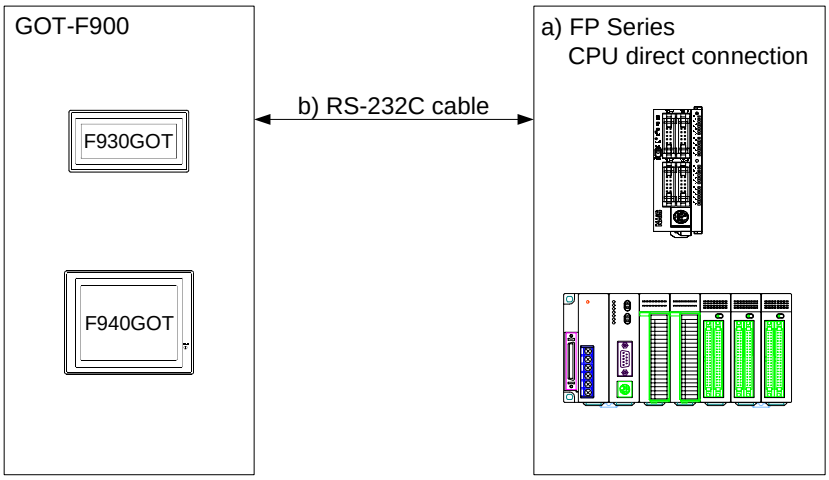
## 18.2 System Configuration

The FP Series PLC can be directly connected to the GOT RS-232C using a control unit, CPU unit or computer communication unit. This section explains the cables and options required in such a system.

### 18.2.1 Configuration for CPU Direct Connection (RS-232C)

The FP0 Series control unit and the FP2SH Series CPU unit is equipped with built-in tool port and COM port (RS-232C interface). Only one GOT unit can be connected to an either interface.
The GOT-F900 and the FP2SH Series CPU unit can be connected on the 1:1 basis. As many GOT-F900 units as the number of computer communication units can be connected.

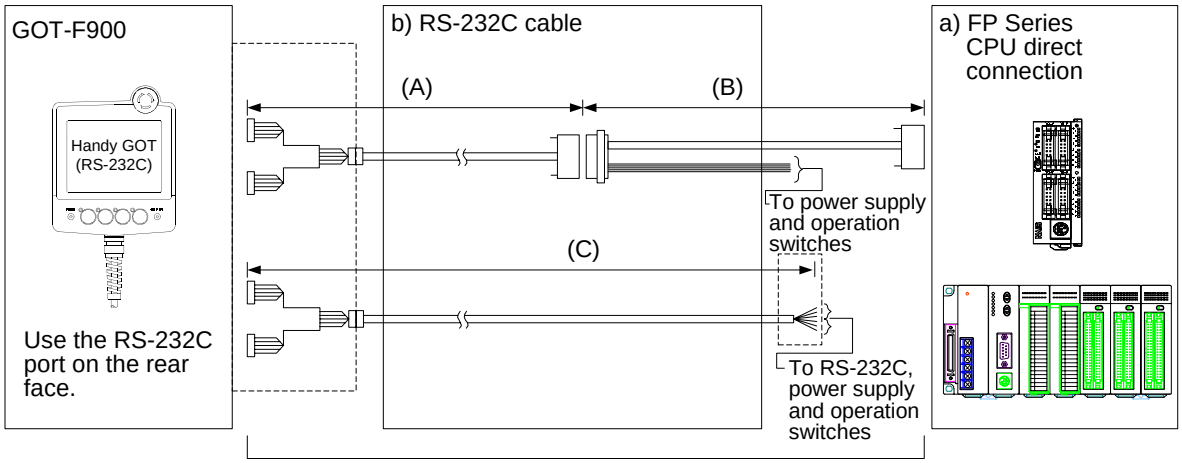
**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




| a) FP | | b) RS-232C cable | Remarks |
|---|---|---|---|
| FP0<br>FP2SH | 5-pin MINI DIN | Prepared by the user (tool port) | Cable AFC8503S manufactured by Matsushita Electric Works is available. |
| FP0 | 3-wire type | Prepared by the user (RS-232C COM port) | COM port may not be built in some models. |
| FP2SH+FP2-CCU | 9-pin D-Sub | | |

- Applicable FP Series products in the column a) are control units, CPU units and computer communication units equipped with built-in RS-232C interface.

### 2) F943 Handy GOT




| a) FP | | b) RS-232C cable | Remarks |
|---|---|---|---|
| FP0<br>FP2SH | 5-pin MINI DIN | (A) F9GT-HCAB-3M | |
| | | (B) Prepared by the user (tool port) | |
| | | (C) F9GT-HCAB1-3M | |
| FP0 | 3-wire type | (A) F9GT-HCAB-3M | COM port may not be built in some models. |
| FP2SH+FP2-CCU | 9-pin D-Sub | (B) Prepared by the user (COM port)<br>(C) F9GT-HCAB1-3M | |

- Applicable FP Series products in the column a) are control units, CPU units and computer communication units equipped with built-in RS-232C interface.
- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 18.3 FP Selection

When connecting the control unit or the CPU unit, the following setting should be executed using the peripheral equipment for the FP Series (FPWIN GR software). When connecting the computer communication unit, the following setting should be executed using the DIP switches.

### 18.3.1 Communication Setting Specifications

This section explains the setting in the FP Series.

**1) Setting the transmission specifications**

Set the transmission specifications as shown in the table below in the FP0 Series control unit and the FP2SH Series CPU unit using the peripheral equipment for the FP Series or in the computer communication unit using the DIP switches.
For the DIP switch setting method, refer to the manual of the computer communication unit.

| Item | | CPU direct connection | Remarks |
|---|---|---|---|
| Transmission speed | | 19200bps | |
| Data format | Data length | 7 bits | |
| | Parity check | Provided (even) | Fixed in the FP2-CCU |
| | Stop bit | 1 bit | Fixed in the FP2-CCU |
| | Start code | STX not provided | Fixed in the FP2-CCU |
| | End code | CR | Fixed in the FP2-CCU |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting the station number**

Align the station number to the value (01 to 31) set in the GOT-F900.
If "00" is set in the GOT-F900, it is treated as "01".

### 18.3.2 Setting Examples in Control Unit and CPU Unit

While referring to the FPWIN GR software operation examples shown below, set the transmission specifications in the FP0 Series control unit or the FP2SH Series CPU unit.

**1) FP0 Series control unit**

Setting example using the FPWIN GR software

Setting the tool port

Open the dialog box by selecting "Option"-"PLC System register setting" on the menu.
Click the "Tool port setting" tab to display the window shown on the left.

Setting the COM port

Open the dialog box by selecting "Option"-"PLC System register setting" on the menu.
Click the "COM port setting" tab to display the window shown on the left.

The sample screens above are in Japanese.

**2) FP2SH Series CPU unit**

Setting example using the FPWIN GR software

Setting the tool port

Open the dialog box by selecting "Option"-"PLC System register setting" on the menu.
Click the "Tool port setting" tab to display the window shown on the left.

Setting the COM port

Open the dialog box by selecting "Option"-"PLC System register setting" on the menu.
Click the "COM port setting" tab to display the window shown on the left.

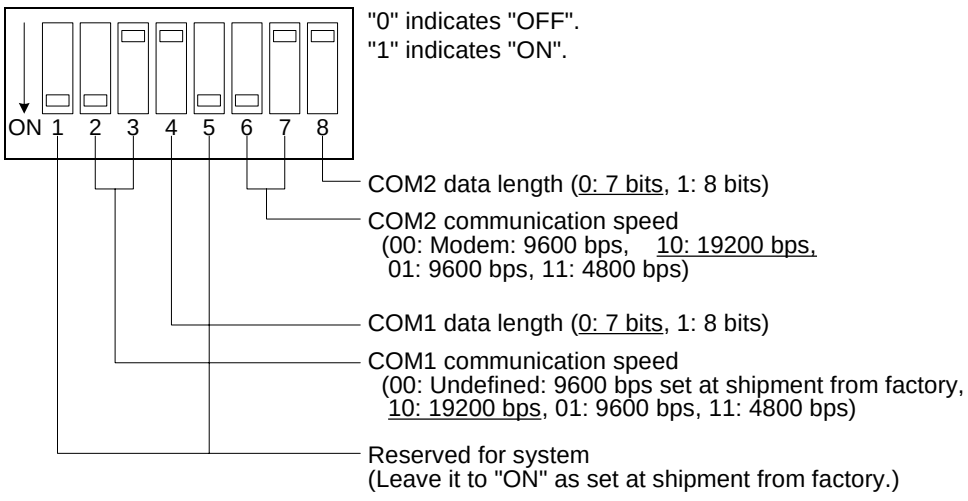
The sample screens above are in Japanese.

## 18.3.3 Setting Examples in Computer Communication Unit

While referring to the setting examples shown below, set the transmission specifications using the DIP switches in the computer communication unit.

FP2-CCU

In the FP2-CCU, use the DIP switches for setting.
The settings of the communication speed and the data length of both the COM1 and the COM2 can be changed using the DIP switches provided on the rear face.


ON 1 2 3 4 5 6 7 8
"0" indicates "OFF".
"1" indicates "ON".
COM2 data length (0: 7 bits, 1: 8 bits)
COM2 communication speed
(00: Modem: 9600 bps, 10: 19200 bps,
01: 9600 bps, 11: 4800 bps)
COM1 data length (0: 7 bits, 1: 8 bits)
COM1 communication speed
(00: Undefined: 9600 bps set at shipment from factory,
10: 19200 bps, 01: 9600 bps, 11: 4800 bps)
Reserved for system
(Leave it to "ON" as set at shipment from factory.)

## 18.4 Cautions on Use of FP Series

When using the GOT-F900 connected to the FP Series PLC, observe the following caution on use.

### 18.4.1 Device specification

Bit devices cannot be specified as word devices. Word devices cannot be specified as bit devices. (Pulse relays (P) and index registers (IX, IY, I) are not available.)
Only devices described in section 3.3 can be specified.

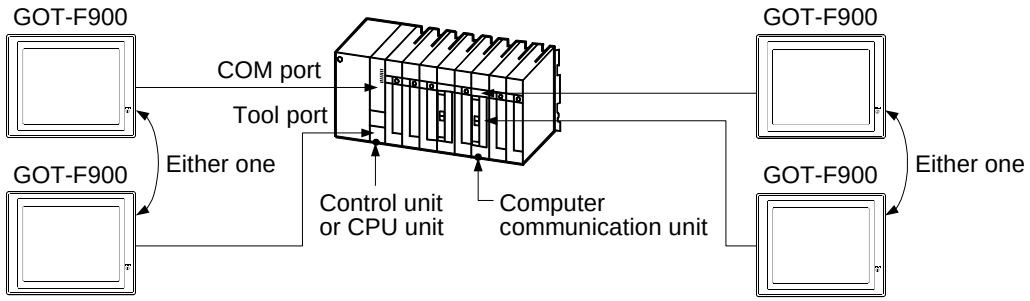
### 18.4.2 Devices which can be monitored

- Data register DT0 to DT16383 is available in the GOT-F900.
  Special data registers (DT9000 to DT9255) within this range can be monitored. In some FP Series models, however, DT9000 to DT90255 cannot be monitored. For the details, refer to the specifications described in the manual of the FP Series CPU.
- As to file registers, only the bank 0 can be monitored.
- Input relay (X), Error alarm relay (E), Timer contact (T) and Counter contact (C) cannot be written from the GOT-F900.

### 18.4.3 Cautions on connection of the control unit, the CPU unit and the computer communication unit

When connecting the control unit or the CPU unit
Connect the GOT-F900 to either one between the tool port and the COM port.

When connecting the computer communication unit
Connect the GOT-F900 to either one between the COM1 port and the COM2 port.
Connection of two GOT units to one computer communication unit at the same time is not allowed.



## 18.5 Setting of Connected Equipment for GOT

The FP Series PLC connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer.

### Setting the Connection Type

Set the connection type in accordance with the connected equipment as shown in the table below.

| Connected equipment [classification in manual] | GOT-F900 | DU/WIN | Remarks |
|---|---|---|---|
| | CONNECTION | Type | |
| Control unit | CPU direct connection (RS-232C) | | FP0 Series |
| CPU unit | | | FP2SH Series |
| Computer communication unit | | | FP2-CCU |

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

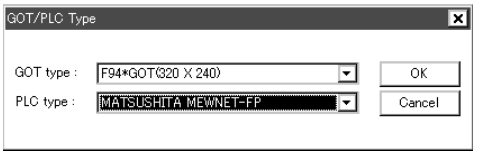
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE".<br>c) Set the following.<br>PLC TYPE:MEW FP SERIES<br>CONNECTION:CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31 ("00" is treated as "01".)<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

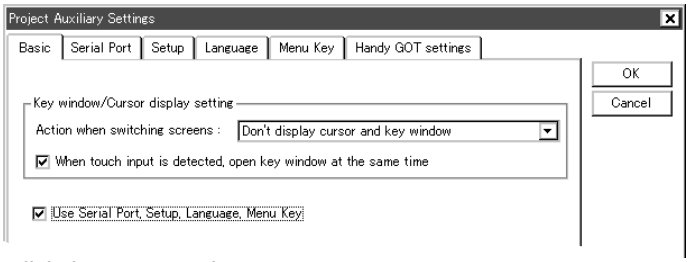
When the main menu screen change operation is enabled.

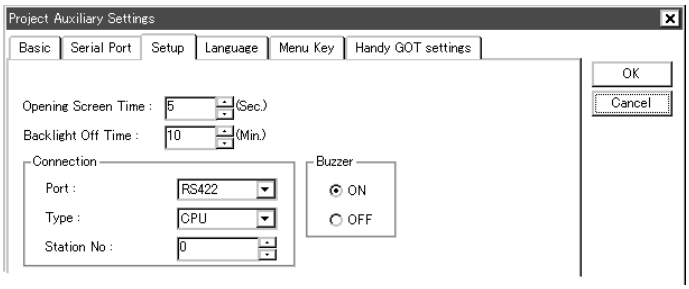
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE".<br>e) Set the following.<br>PLC TYPE: MEW FP SERIES<br>CONNECTION:CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31 ("00" is treated as "01".)<br>GOT STATION # (–) : – | The "PLC TYPE" screen appears. |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open GT Designer.<br><br>
b) Click the [New] button.<br>


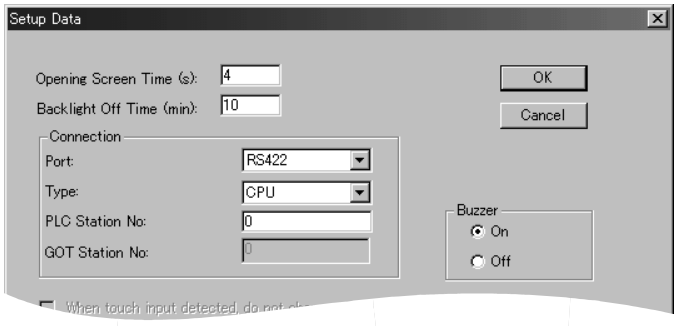
<br>
c) Set the following.<br>
GOT type: F940WGOT (480 × 234) <WIDE><br>
F94*GOT (320 × 240)<br>
F93*GOT (240 × 80)<br>
PLC type: MATSUSHITA MEWNET-FP<br>
Selection of "GOT type"
<table>
<tr><th>GOT type</th><th>Model name</th></tr>
<tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr>
<tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr>
<tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr>
</table>
Click [OK].<br><br>
d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>
This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>
Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br>


<br>
Click the "Setup" tab.<br>


<br>
e) Set the following.<br>
Port : RS-232C<br>
Type : CPU<br>
DST Station No. (Station No.) : 00 to 31 ("00" is treated as "01".)<br>
GOT Station No. (–) : –
</td><td>
The "Select Project" dialog box appears.<br><br>
The "GOT/PLC Type" dialog box appears.<br><br><br>

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>
a) Open the DU/WIN.<br><br>
b) On the menu, select "File"-"New".<br>

<br>
c) Set the following.<br>
Terminal: F940WGOT-TWD(V)(H)<br>
F940GOT-LWD<br>
F940GOT-SWD<br>
F930GOT-BWD<br>
PLC System: Matsushita-FP<br><br>
Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>
On the menu, select "View/Project"-"System Settings"-"Setup Data".<br>


<br>
e) Set the following.<br>
Port: RS-232C<br>
Type: CPU<br>
DST Station No. (Station No.): 0 to 31<br>
GOT Station No. (–) : –
</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>
Change the connection type of the already created data as follows.<br>
a) Open DU/WIN.<br>
b) On the menu, select "File"-"Open".<br>
c) Select and open (read) the file of the screen data to be changed.<br>
d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>
For the contents of setting, refer to c) in [Creation] above.<br>
For selection of RS-232C/RS-422, refer to e) in [Creation] above.
</td><td>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

## 18.6 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the FP Series PLC manufactured by Matsushita Electric Works.

**1) Cable for the GOT and the FP Series PLC manufactured by Matsushita Electric Works**

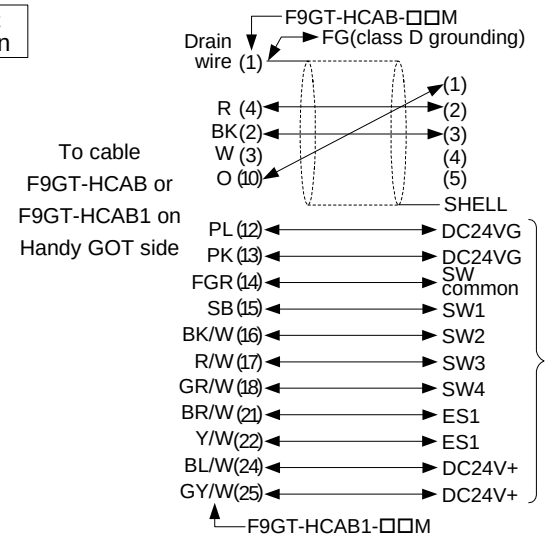
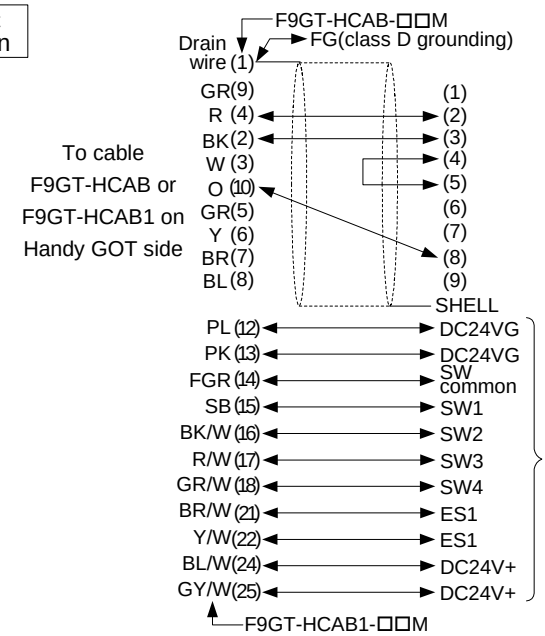
: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-232C connection<br>FP Series<br>Prepared by the user<br>(Cable AFC8503S manufactured by Matsushita Electric Works is available.) | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(1) (2) (3) (4) (5) (6) (7) (8) (9)<br>(1) (2) (3) (4) (5) | Tool port<br>1 2 4<br>3 5<br>5-pin MINI DIN, male |
| b) | RS-232C connection<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(1) (2) (3) (4) (5) (6) (7) (8) (9)<br>(1) (2) (3) (4) (5) (6) (7) (8) (9) | COM port<br>1 5<br>6 9<br>9-pin D-Sub, male |
| c) | RS-232C connection<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | FG(class D grounding)<br>(1) (2) (3) (4) (5) (6) (7) (8) (9)<br>(S) (R) (G) | COM port<br>S R G<br>SG<br>RD<br>SD<br>3-wire type |

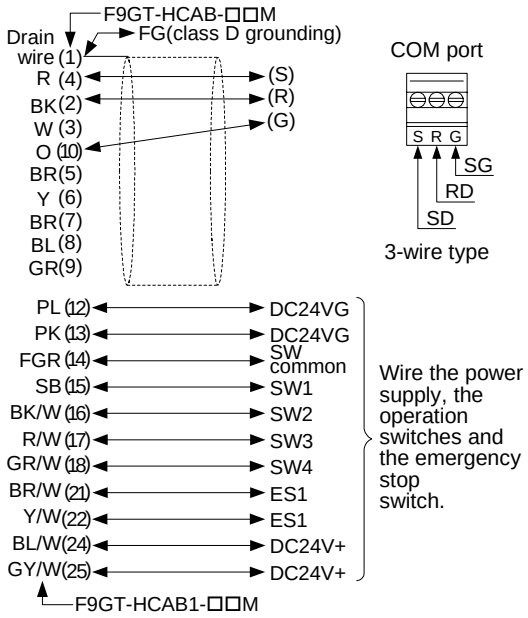
### 2) Cable for the F943 Handy GOT and the FP Series PLC manufactured by Matsushita Electric Works

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To F9GT-HCAB3-150<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | FP Series<br>Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | Tool port<br>1 2 4<br>3 5<br>5-pin MINI-DIN, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | COM port<br>1 5<br>6 9<br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| e) | Prepared by the user<br>RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side |  | <br>3-wire type<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 18.7 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FP Series PLC manufactured by Matsushita Electric Works.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the FP Series PLC is turned off.<br><br>• Cause<br>Communication is disabled because the power of the FP Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the FP Series PLC.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Canaveral to a nonexistent screen by a touch key or the FP Series PLC was tried.<br><br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br><br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the FP Series PLC was referenced. (Example: While an FP0 is connected, a device exists only in the FP2SH is specified for numeric input.)<br><br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected FP Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br><br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the FP Series PLC is referenced. (Example: While an FP0 is connected, a device exists only in the FP2SH is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected FP Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | An FP Series PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# MEMO

# 19. Connection of SLC500/MicroLogix Series PLC (Manufactured by Allen-Bradley)

This chapter explains the procedure to connect the GOT-F900 Series display unit to the SLC500/MicroLogix Series PLC.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the SLC500/MicroLogix Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 19.1 |
| System Configuration | You can select the configuration between the GOT and the SLC500/MicroLogix Series PLC and proper cables. | 19.2 |

*2.* Setting

| Item name | Description | | Reference |
|---|---|---|---|
| Setting in SLC500 | You can learn the communication specifications and the contents of setting. | | 19.3 |
| | Communication Setting Specifications | The the transmission specifications set in the SLC500 CPU | 19.3.1 |
| | GOT-F900 Transmission Specifications | The communication specifications set in the GOT | 19.3.2 |
| | Example of Setting Screen of RSLogix500 Software | The setting screen of the package software RSLogix500 | 19.3.3 |
| Setting in MicroLogix | You can learn the communication specifications and the contents of setting. | | 19.4 |
| | Communication Setting Specifications | The transmission specifications set in the MicroLogix CPU | 19.4.1 |
| | GOT-F900 Transmission Specifications | The communication specifications set in the GOT | 19.4.2 |
| | Example of Setting Screen of RSLogix500 Software | The setting screen of the package software RSLogix500 | 19.4.3 |
| Device Specification Method | You can learn devices which can be monitored in the GOT and their formats. | | 19.5 |
| | Device Format | How to see devices | 19.5.1 |
| | File Number and Element Range | The file number and allowable element specification range | 19.5.2 |
| | Restriction in Device Specification | Cautions on unsupported devices | 19.5.3 |
| Caution on Use of SLC500/MicroLogix Series PLC | You can learn the restrictions in connecting the GOT to the SLC500/MicroLogix Series PLC. | | 19.6 |
| Setting of Connected Equipment for GOT | Set the PLC type using the GOT or the screen creation software. | | 19.7 |

### 3. Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for SLC500/MicroLogix Series PLC and GOT connection | 19.8 |
| Troubleshooting | Description of errors and how to fix them | 19.9 |

## 19.1 System Condition

When connecting the SLC500/MicroLogix Series PLC, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting SLC500 Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | – | ✓ | ✓ | – | 2.00 | SW1-H | 2.30 |
| F930GOT-K | – | ✓ | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | ✓ | – | 2.00 | SW1-A | 2.30 |
| F940WGOT | – | ✓ | ✓ | – | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | – | – | It cannot be connected. Select the F943 Handy GOT. | | | | |
| F943 Handy GOT | – | ✓ | ✓ | – | 2.00 | SW1-D | 2.30 |

Compatibility when connecting MicroLogix Series PLC

| Type | F930GOT | F930GOT-K | F940GOT | F940WGOT | Handy GOT |
|---|---|---|---|---|---|
| GOT-F900 OS version | 4.00 | 4.60 | 6.00 | 1.00 | 6.00 |

- The screen creation software (GT Designer) Version SW5-F (5.05F) or later which is applicable to the MicroLogix Series is required.
  Screens cannot be created using a version earlier than SW5-F (5.05F). Prepare an applicable version.
- The screen creation software (DU/WIN) version 2.50 or later which is applicable to the MicroLogix Series is required.
  Screens cannot be created using a version earlier than 2.50. Prepare an applicable version.

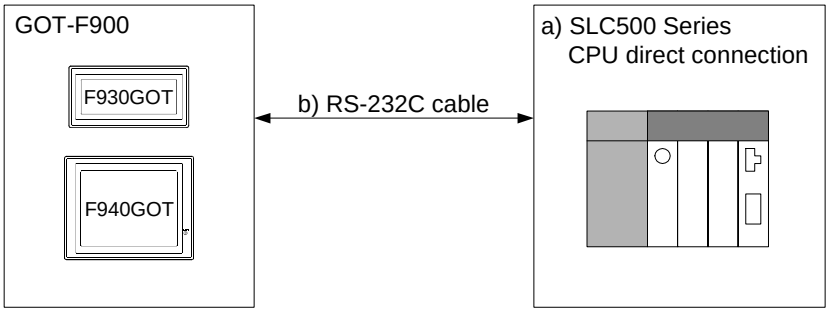
## 19.2 System Configuration

The SLC500/MicroLogix Series PLC can be directly connected to the GOT via RS-232C. This section explains the cables and options required in such a system.

### 19.2.1 Configuration for CPU Direct Connection (RS-232C)

The GOT-F900 and the SLC500/MicroLogix Series CPU can be connected on the 1:1 basis.
For the cable length or the detailed specifications of the SLC500/MicroLogix Series, refer to the corresponding manual.

**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**

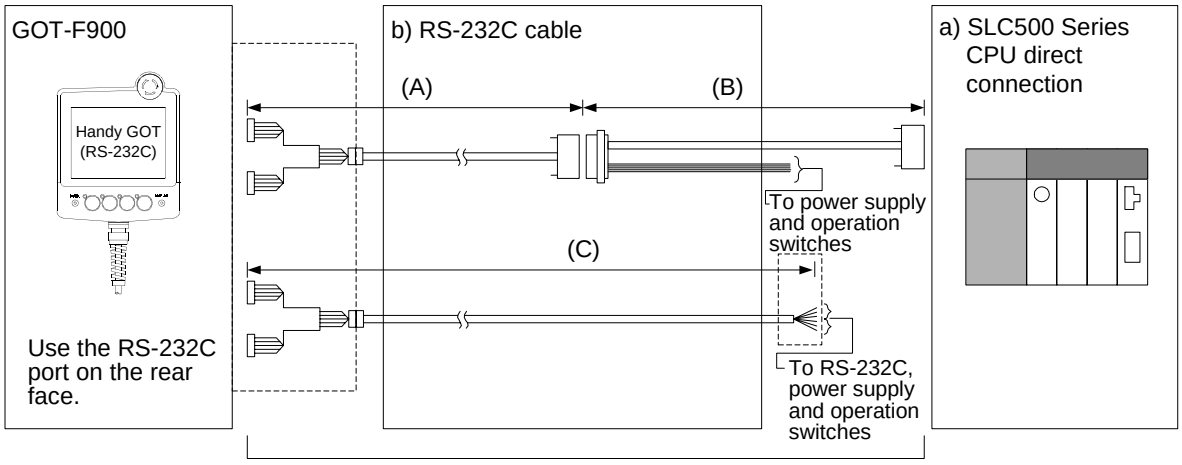



| a) SLC500 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| SLC5/03 | 9-pin D-Sub, male | Prepared by the user | |
| SLC5/04 | | | |
| MicroLogix1000*1 | 8-pin MINI DIN, female | Prepared by the user *2 | |
| MicroLogix1000 Analog | | | |
| MicroLogix1200 | | | |
| MicroLogix1500 | | | |

*1 Only the Series D or later can be connected.

*2 1761-CBL-PM02 cable (Series C or later) manufactured by Allen-Bradley is available.

### 2) F943 Handy GOT




| a) SLC500 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| SLC5/03<br>SLC5/04 | 9-pin D-Sub, female | (A) F9GT-HCAB-3M | |
| | | (B) Prepared by the user | |
| | | (C) F9GT-HCAB1-□□M | |
| MicroLogix1000*1<br>MicroLogix1000 Analog<br>MicroLogix1200<br>MicroLogix1500 | 8-pin MINI DIN, male | (A) F9GT-HCAB-3M | |
| | | (B) Prepared by the user | |
| | | (C) F9GT-HCAB1-□□M | |
| | | | |

*1 Only the Series D or later can be connected.

- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 19.3 Setting in SLC500

When directly connecting the SLC500 CPU, the usage of the RS-232C port should be changed using the peripheral equipment for the SLC500 Series (package software RSLogix500).

### 19.3.1 Communication Setting Specifications

Set the transmission specifications in the SLC500 as shown in the table below. For the setting method, refer to the manual of the SLC500 Series.

**Setting the RS-232C (channel 0) Parameters**

| Parameter | Set value |
|---|---|
| System Mode Driver | DF1 Half-Duplex Slave |
| Others | Leave them in default values. |

**DF1 Half-Duplex Slave Channel Configuration**

Set the parameters in shaded boxes. Leave other parameters in default values.

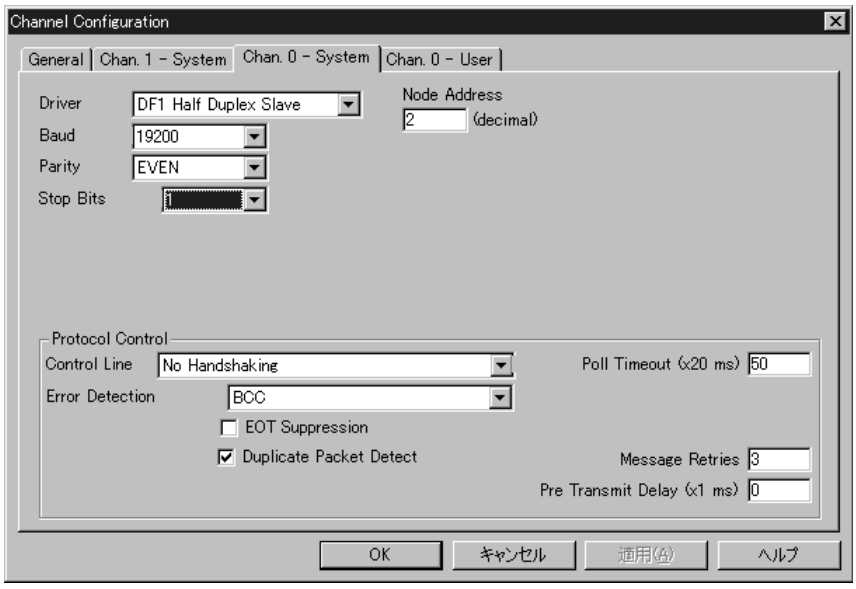
| Parameter | Set value |
|---|---|
| Diagnostic File | – |
| Baud Rale | 19200 bps |
| Parity | Even |
| Duplicate Packet Delection | Disabled |
| Node Address | 0 to 31 (Align with the station number setting in the GOT.) |
| Error Delection | BCC |
| Poll Timeout | 50 |
| RTS Off Delay | 0 |
| RTS Send Delay | 0 |
| Message Retries | 3 |
| Control Line | No Handshanking |
| EOT Suppression | No |

### 19.3.2 GOT-F900 Transmission Specifications

| Item | | Set value |
|---|---|---|
| Transmission speed | | 19200 bps |
| Data format | Data bit | 8 bits |
| | Parity bit | Provided (even) |
| | Stop bit | 1 bit |
| | Control method | Not provided |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

### 19.3.3 Example of Setting Screen of RSLogix500 Software



## 19.4 Setting in MicroLogix

When directly connecting the MicroLogix CPU, the usage of the RS-232C port should be changed using the peripheral equipment for the PLC (package software RSLogix500).

### 19.4.1 Communication Setting Specifications

Set the transmission specifications in the MicroLogix as shown in the table below. For the setting method, refer to the manual of the MicroLogix Series.

**Setting the RS-232C (channel 0) Parameters**

| Parameter | Set value |
|---|---|
| System Mode Driver | DF1 Half-Duplex Slave |
| Others | Leave them in default values. |

**DF1 Half-Duplex Slave Channel Configuration**

Set the parameters in shaded boxes. Leave other parameters in default values.

| Parameter | Set value |
|---|---|
| Node Address | 0 to 31 (Align with the station number setting in the GOT) |
| Baud Rale | 9600 bps |
| Parity | None |
| Duplicate Packet Delection | Enable |
| Error Delection | CRC |
| Poll Timeout | 3000 |
| RTS Off Delay | 0 |
| RTS Send Delay | 0 |
| Message Retries | 3 |
| Control Line | No Handshanking |
| EOT Suppression | No |

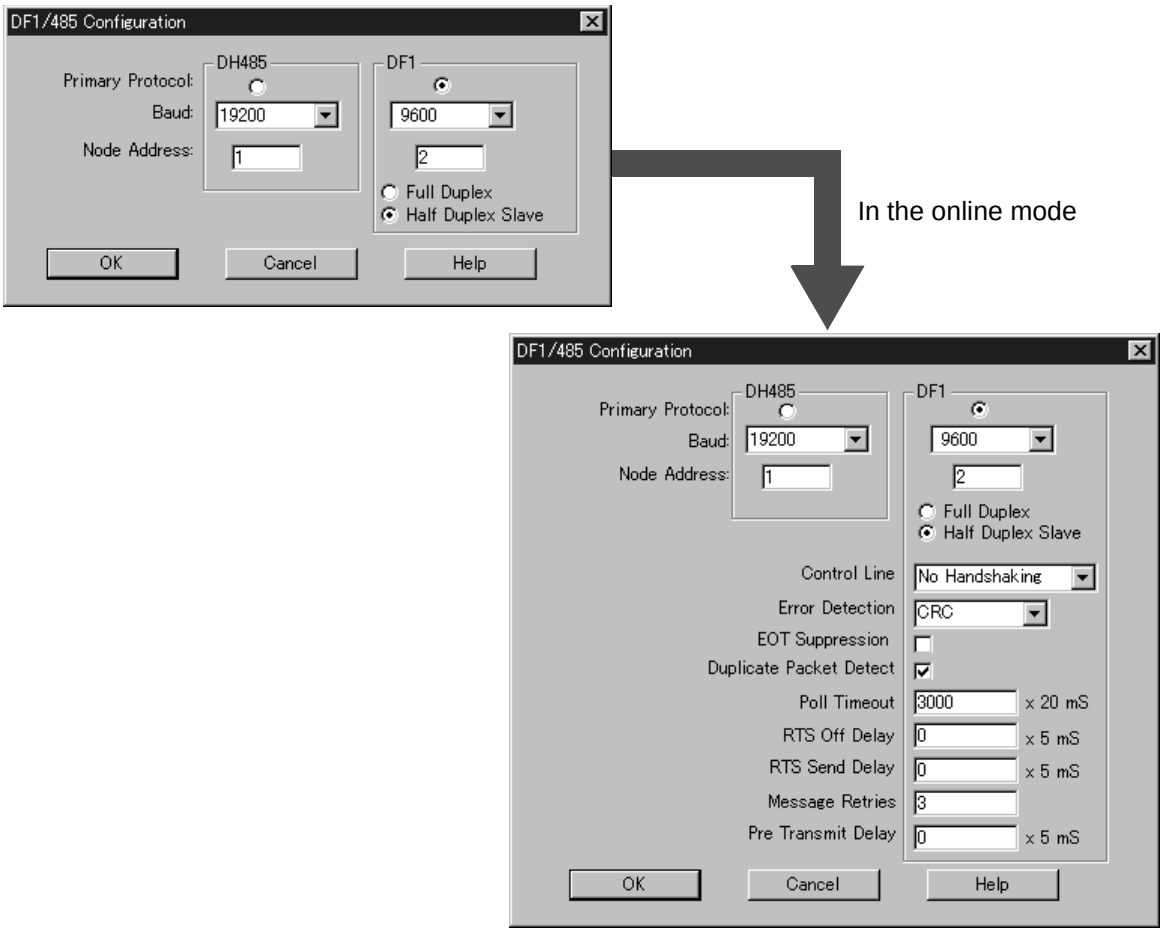
### 19.4.2 GOT-F900 Transmission Specifications

| Item | | Set value |
|---|---|---|
| Transmission speed | | 9600 bps |
| Data format | Data bit | 8 bits |
| | Parity bit | Not provided |
| | Stop bit | 1 bit |
| | Control method | Not provided |

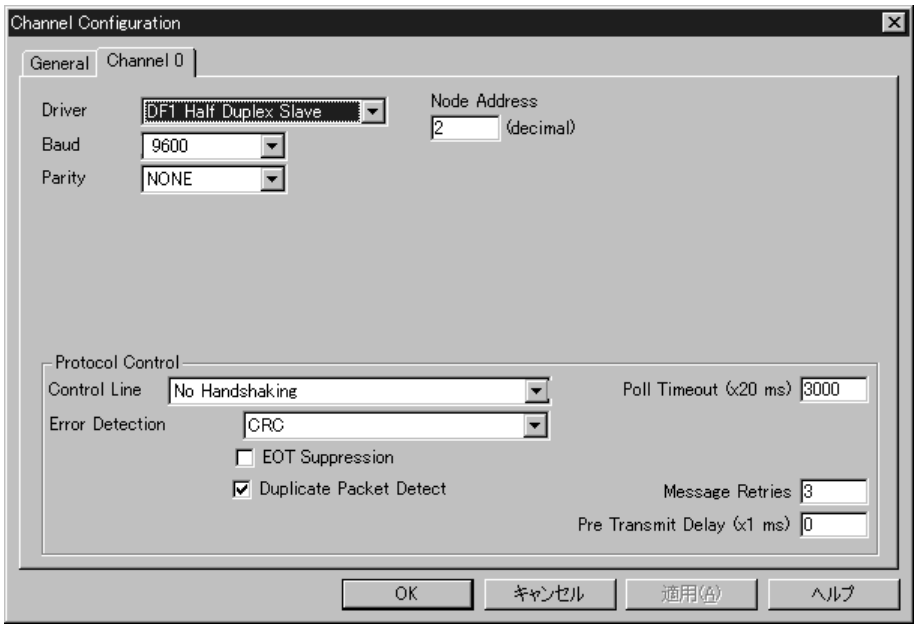
- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

### 19.4.3 Examples of Setting Screen of RSLogix500 Software

**1) MicroLogix 100**




**2) MicroLogix 100**



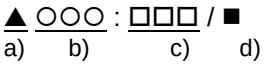
## 19.5 Device Specification Method

This section explains the format used to specify devices of the SLC500 Series.
For the device range which can be set in the GOT-F900, refer to section 3.3.

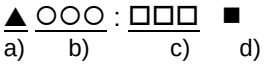
### 19.5.1 Device Format

| • GT Designer version SW5-F (5.05F) or later<br>• DU/WIN version 2.5 or later | • GT Designer earlier than version SW5-F (5.05F)<br>• DU/WIN earlier then version 2.5 |
|---|---|

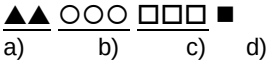
Bit device




Word device




Bit device/word device




**1) Bit device**

a) Specify the device symbol in one or two alphabets.

b) Specify the file number corresponding to each device in a 1- to 3-digit decimal number. (For the available specification range, refer to the next section.)
The file numbers 10 to 255 should be set in advance using the package software manufactured by Allen-Bradley.

c) Specify the element (device number) in a 1- to 3-digit decimal number.
(For the available specification range, refer to the next section.)

d) Bit position

- GT Designer version SW5-F (5.05F) or later

  Specify the bit position in a 1-digit decimal number (0 to 15) while using slash (/) as the delimiter.
  Example: To specify bit (B) "B3:64/14"
  Device symbol : B File number : 3
  Element (device number) : 64 Bit position : 14

- GT Designer earlier than version SW5-F (5.05F)
  DU/WIN

  Specify the bit position in a 1-digit hexadecimal number (0 to F).
  Example: To specify bit device "B003064E"
  Device symbol : B File number : 003
  Element (device number) : 064 Bit position : E

**2) Word device**

The specification method is equivalent to that for bit devices except "d) Bit position".

a) Specify the device symbol in one or two alphabets.

b) Specify the file number corresponding to each device in a 1- to 3-digit decimal number. (For the available specification range, refer to the next section.)
The file numbers 10 to 255 should be set in advance using the package software manufactured by Allen-Bradley.

c) Specify the element (device number) in a 1- to 3-digit decimal number.
(For the available specification range, refer to the next section.)

d) Device classification (only in Timer and Counter)

- GT Designer version SW5-F (5.05F) or later

  Specify the device classification in three alphabets while using a decimal point (.) as the delimiter.
  Example: To specify timer (T) (set value) "T57:129.PRE"
  Device symbol : T File number : 57
  Element (device number) : 129 Device classification : PRE

- GT Designer earlier than version SW5-F (5.05F)
  DU/WIN

  The device classification does not have to be specified.
  Example: To specify timer (TP) (set value) "TP057129"
  Device symbol : TP File number : 57
  Element (device number) : 129

## 19.5.2 File Number and Element Range

This section explains file numbers and element range of devices which can be monitored in the GOT-F900.

### 1) SLC500 Series

| Device name (symbol) | | Conventional format | New format | File number *1 | | Available element specification range |
|---|---|---|---|---|---|---|
| Bit device | Bit | (B) | (B) | 3 | 10 to 255 | 0 to 255*2 |
| | Timer (timing bit) | (TT) | (T) | 4 | 10 to 255 | 0 to 255 |
| | Timer (completion bit) | (TN) | (T) | 4 | 10 to 255 | 0 to 255 |
| | Counter (up counter) | (CU) | (C) | 5 | 10 to 255 | 0 to 255 |
| | Counter (down counter) | (CD) | (C) | 5 | 10 to 255 | 0 to 255 |
| | Counter (completion bit) | (CN) | (C) | 5 | 10 to 255 | 0 to 255 |
| Word device | Timer (set value) | (TP) | (T) | 4 | 10 to 255 | 0 to 255 |
| | Timer (current value) | (TA) | (T) | 4 | 10 to 255 | 0 to 255 |
| | Counter (set value) | (CP) | (C) | 5 | 10 to 255 | 0 to 255 |
| | Counter (current value) | (CA) | (C) | 5 | 10 to 255 | 0 to 255 |
| | Integer | (N) | (N) | 7 | 10 to 255 | 0 to 255 |

*1 The file number 10 to 255 are available in the user settings.

*2 The bit position can be specified in the range from 0 to F (15) for each element.

### 2) MicroLogix1000/1200/1500 Series

| Device name (symbol) | | | File number *1 | Available element specification range |
|---|---|---|---|---|
| Bit device | Bit | (B) | 3 to 255 | 0 to 255*2 |
| | Timer (timing bit) | (T) | 3 to 255 | 0 to 255 |
| | Timer (completion bit) | (T) | 3 to 255 | 0 to 255 |
| | Counter (up counter) | (C) | 3 to 255 | 0 to 255 |
| | Counter (down counter) | (C) | 3 to 255 | 0 to 255 |
| | Counter (completion bit) | (C) | 3 to 255 | 0 to 255 |
| Word device | Timer (set value) | (T) | 3 to 255 | 0 to 255 |
| | Timer (current value) | (T) | 3 to 255 | 0 to 255 |
| | Counter (set value) | (C) | 3 to 255 | 0 to 255 |
| | Counter (current value) | (C) | 3 to 255 | 0 to 255 |
| | Integer | (N) | 3 to 255 | 0 to 255 |

*1 The file numbers 3 to 255 are available in the user settings.

*2 The bit position can be specified in the range from 0 to 15 for each element.

## 19.5.3 Restriction in Device Specification

- Word specification of bit devices and bit specification of word devices are not enabled in the GOT.
- Devices not shown in the tables above (devices related to input image, output image, status, control, floating point and network) are not available in the GOT.

## 19.6 Caution on Use of SLC500/MicroLogix Series PLC

When using the GOT-F900 connected to the SLC500/Micro Logix Series PLC, observe the following caution on use.

### 19.6.1 Device setting in advance

The user is required to set devices to be used for the SLC500/MicroLogix Series. Accordingly, if devices to be monitored or set are not specified in the PLC, a communication error occurs.

### 19.6.2 Caution on use of the sampling function

The GOT-F900 is always monitoring sampling devices in the sampling mode even if the sampling condition is not set. As a result, a communication error occurs if sampling devices are not present. In such a case, change sampling devices or set devices in the SLC500/MicroLogix Series.

## 19.7 Setting of Connected Equipment for GOT

The SLC500/MicroLogix Series PLC connection parameters connection can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE: AB SLC500<br>AB Micrologix<br>CONNECTION:CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

When the main menu screen change operation is enabled.

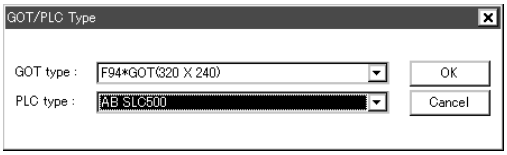
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: AB SLC500<br>AB Micrologix<br>CONNECTION:CPU PORT (RS-232C)<br>DST STATION # (STATION #): 00 to 31<br>GOT STATION # (–) : – | |

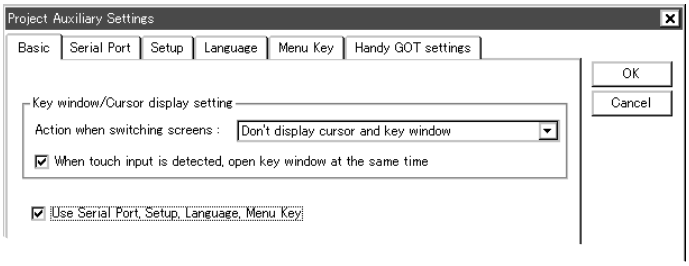
- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.
- The "PLC type" selection item display varies depending on the OS version.

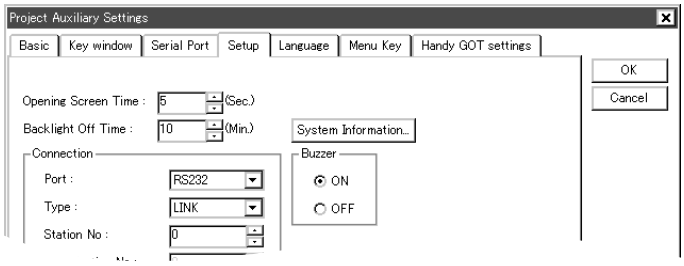
| "PLC TYPE" selection item display | | AB SLC500 | AB SLC500*1<br>AB MicroLogix |
|---|---|---|---|
| Version | F940WGOT | – | 1.00 or later |
| | F940GOT, Handy GOT | 2.00 or later | 6.00 or later |
| | F930GOT | 2.00 or later | 6.00 or later |
| | F930GOT-K | 4.60 or later | 4.60 or later |

*1 The selection item display is changed to "AB SLC500" and "AB MicroLogix".

### 2) GT Designer

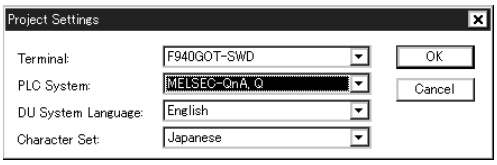
<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open GT Designer.<br><br>b) Click the [New] button.<br> 

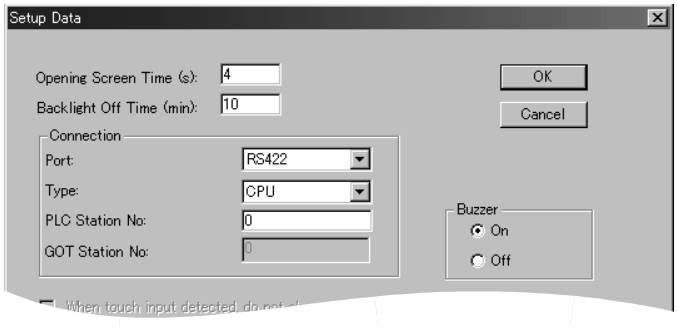
<br>c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>PLC type: AB SLC500<br>AB MicroLogix1000/1200/1500<br><br>Selection of "GOT type"<br><table><tr><th>GOT type</th><th>Model name</th></tr><tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr><tr><td>F940GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr><tr><td>F930GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr></table>Click [OK].<br><br>d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>This setting is enabled in the SW4D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

<br>Click the "Setup" tab.<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| | In the case of SW4D5C-GOTR-PACKE earlier than version A, perform the setting in the GOT-F900.<br>(Set the connection in "CONNECTION" in the GOT-F900.)<br>For the setting method, refer to "(1) GOT-F900 Series" on the previous page.<br>e) Set the following.<br>Port : RS-232C<br>Type : CPU<br>DST Station No. (Station No.) : 00 to 31<br>GOT Station No. (–) : – | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears. |

### 3) DU/WIN

<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open the DU/WIN.<br><br>b) On the menu, select "File"-"New".<br> 

<br>c) Set the following.<br>Terminal: F940WGOT-TWD(V)(H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: AB-SLC500<br>AB-MicroLogix<br><br>Select "Terminal" in accordance with the LC display color.
<table>
<tr><th>Terminal</th><th>Model name</th></tr>
<tr><td>F940WGOT-TWD (V)(H)</td><td>F940WGOT (color)</td></tr>
<tr><td>F940GOT-LWD</td><td>F940GOT (black and white)<br>Handy GOT (black and white)</td></tr>
<tr><td>F940GOT-SWD</td><td>F940GOT (color)<br>Handy GOT (color)</td></tr>
<tr><td>F930GOT-BWD</td><td>F930GOT-K (blue)<br>F930GOT (blue)</td></tr>
</table>
d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br> 

<br>e) Set the following.<br>Port: RS-232C<br>Type: CPU<br>DST Station No. (Station No.) : 00 to 31<br>GOT Station No. (–) : –</td><td>The "Project settings" dialog box appears.<br><br>The "Setup Data" dialog box appears.</td></tr>
<tr><td>[Change method]</td><td>Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For selection of RS-232C/RS-422, refer to e) in [Creation] above.</td><td><br><br>The "Open" dialog box appears.<br>The "Project settings" dialog box appears.</td></tr>
</table>

## 19.8 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the SLC500/MicroLogix Series PLC manufactured by Allen-Bradley.

### 1) Cable for the GOT and the PLC manufactured by Allen-Bradley

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-232C connection<br>SLC500 Series<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (1) (2) (3) (4) (5) (6) (7) (8) (9)<br>(1) CD(DCC)<br>(2) RD(RXD)<br>(3) SD(TXD)<br>(4) ER(DTR)<br>(5) SG(GND)<br>(6) DR(DSR)<br>(7) RS(RTS)<br>(8) CS(CTS)<br>(9) NC<br>Shell | SLC500 (COM port)<br>1 5<br>6 9<br>9-pin D-Sub, male |
| b) | RS-232C connection<br>MicroLogix Series*1<br>Prepared by the user | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | (1) (2) (3) (4) (5) (6) (7) (8) (9)<br>(1) +24V<br>(4) RD(RXD)<br>(7) SD(TXD)<br>(5) CD(DCD)<br>(2) SG(GND)<br>(8) SG(GND)<br>(3) RS(RTS)<br>(6) CS(CTS)<br>Shell | MicroLogix (COM port)<br>3 4 6<br>1 7<br>2 8<br>5<br>8-pin MINI-DIN, female |

*1 1761-CBL-PM02 cable (Series C or later) manufactured by Allen-Bradley is available.

**2) Cable for the F943 Handy GOT and the PLC manufactured by Allen-Bradley**

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To cable prepared by user<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M<br>RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | SLC500 Series<br>Prepared by the user<br>RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>R(4) (1) CD(DCC)<br>BK(2) (2) RD(RXD)<br>W(3) (3) SD(TXD)<br>O(10) (4) ER(DTR)<br>GR(5) (5) SG(GND)<br>Y(6) (6) DR(DSR)<br>BR(7) (7) RS(RTS)<br>(8) CS(CTS)<br>(9) NC<br>SHELL<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M | SLC500 side (COM port)<br>1 5<br>6 9<br>9-pin D-Sub, male<br>Wire the power supply, the operation switches and the emergency stop switch. |
| d) | MicroLogix Series<br>Prepared by the user<br>RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>(1) +24V<br>R(4) (4) RD(RXD)<br>BK(2) (7) SD(TXD)<br>W(3) (5) CD(DCD)<br>O(10) (2) SG(GND)<br>GR(5) (8) SG(GND)<br>Y(6) (3) RS(RTS)<br>BR(7) (6) CS(CTS)<br>SHELL<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M | MicroLogix (COM port)<br>3 4 6<br>1 7<br>2 8<br>5<br>8-pin MINI DIN, female<br>Wire the power supply, the operation switches and the emergency stop switch. |

## 19.9 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the SLC500/MicroLogix Series PLC manufactured by Allen-Bradley.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the SLC500/MicroLogix Series PLC is turned off.<br>• Cause<br>Communication is disabled because the power of the SLC500/MicroLogix Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the SLC500/MicroLogix Series PLC.<br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the SLC500/MicroLogix Series PLC was tried.<br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the SLC500/MicroLogix Series was referenced. (Example: While an SLC500 is connected, a device exists only in the MicroLogix is specified for numeric input.)<br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected SLC500/MicroLogix Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the SLC500/MicroLogix Series PLC was referenced. (Example: While an SLC500 is connected, a device exists only in the MicroLogix is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected SLC500/MicroLogix Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | In the personal computer connected to the GOT-F900, screen data cannot be transferred.<br>Communication with the screen creation software is disabled. An error message is displayed. | A SLC500/MicroLogix Series PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code reader to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. |

# MEMO

# 20. Connection of SIMATIC S7-200/300/400 Series PLC (Manufactured by Siemens AG)

This chapter explains the procedure to connect the GOT-F900 Series display unit to the SIMATIC S7-200/300/400 Series PLC.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the SIMATIC S7-200/300/400 Series PLC.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 20.1 |
| System Configuration | You can select the configuration between the GOT and the SIMATIC S7-200/300/400 Series PLC and proper cables.<br>You can learn options such as adapter and cable manufactured by Siemens AG. | 20.2 |

*2.* Setting

| Item name | Description | | Reference |
|---|---|---|---|
| Setting in SIMATIC S7-200 | You can learn the communication specifications and the contents of setting. | | 20.3 |
| | Communication Setting Specifications | The transmission specifications set in the SIMATIC S7-200 | 20.3.1 |
| | GOT-F900 Transmission Specifications | The transmission specifications set in the GOT-F900 | 20.3.2 |
| SIMATIC S7-300/400 Selection | You can learn the communication specifications and the contents of setting. | | 20.4 |
| | Communication Setting Specifications | The transmission specifications set in the SIMATIC S7-300/400 | 20.4.1 |
| | GOT-F900 Transmission Specifications | The transmission specifications set in the GOT-F900 | 20.4.2 |
| Device Specification Method | You can learn devices which can be monitored in the GOT and their formats. | | 20.5 |
| | Device Format in SIMATIC S7-200 | How to see devices | 20.5.1 |
| | Device Format in SIMATIC S7-300/400 | The supplementary explanation in device specification | 20.5.2 |
| | Supplementary Items | Cautions on unavailable devices | 20.5.3 |
| Caution on Use of SIMATIC S7-200/300/400 Series PLC | You can learn the restrictions in connecting the GOT to the SIMATIC S7-200/300/400 Series PLC. | | 20.6 |
| Setting of Connected Equipment for GOT | Set the connected PLC type using the GOT or the screen creation software. | | 20.7 |

### 3. Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for SIMATIC S7-200/300/400 Series PLC and GOT connection | 20.8 |
| Troubleshooting | Description of errors and how to fix them | 20.9 |

## 20.1 System Condition

When connecting the SIMATIC S7-200/300/400 Series PLC, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting SIMATIC S7-200 Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | – | ✓ | ✓ | – | 4.20 | SW5-R | 2.52 |
| F930GOT-K | – | ✓ | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | ✓ | – | 6.20 | SW5-R | 2.52 |
| F940WGOT | – | ✓ | ✓ | – | 1.20 | SW5-R | 2.52 |
| F940 Handy GOT | – | – | – | – | It cannot be connected. Select the F943 Handy GOT. | | |
| F943 Handy GOT | – | ✓ | ✓ | – | 6.20 | SW5-R | 2.52 |

Compatibility when connecting SIMATIC S7-300/400 Series PLC

| GOT-F900 Series | COM port | | Connection type | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|---|---|
| | RS-422 | RS-232C | 1:1 | Two or more GOT units | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – | – | – |
| F930GOT | – | ✓ | ✓ | – | 3.00 | SW5-F | 2.40 |
| F930GOT-K | – | ✓ | ✓ | – | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | ✓ | – | 5.00 | SW5-F | 2.40 |
| F940WGOT | – | ✓ | ✓ | – | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | – | – | – | – | It cannot be connected. Select the F943 Handy GOT. | | |
| F943 Handy GOT | – | ✓ | ✓ | – | 5.00 | SW5-F | 2.40 |

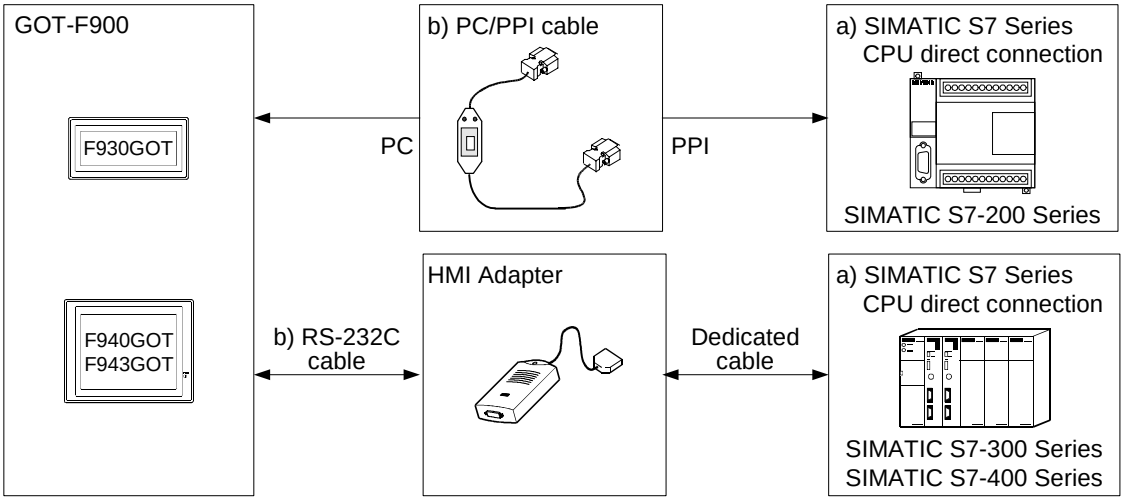
## 20.2 System Configuration

The SIMATIC S7-200/300/400 Series PLC can be directly connected to the GOT via RS-232C. This section explains the cables and options required in such a system.

### 20.2.1 Configuration for CPU Direct Connection (RS-232C)

Connect the connector on the PPI side of the PC/PPI cable (6ES7 901-3BF20-0XA0) to the SIMATIC S7-200 Series CPU, then connect the connector on the PC side to the RS-232C communication port of the GOT.
Connect the HMI adapter (6ES7 972-0CA11-0XA0) to the SIMATIC S7-300/400 Series CPU, then connect the RS-232C port of the HMI adapter to the RS-232C port of the GOT with a dedicated cable (6ES7 972-0CA10-0XA0).

**1) F930GOT/F930GOT-K/F940GOT/F940WGOT**




SIMATIC S7-200 Series

| a) SISMAC S7 | | b) PC/PPI cable | Remarks |
|---|---|---|---|
| 212<br>214<br>215<br>216<br>221<br>222<br>224 | 9-pin D-Sub (connector of PC/PPI cable) | 6ES7 901-3BF20-0XA0 cable manufactured by Siemens AG | |

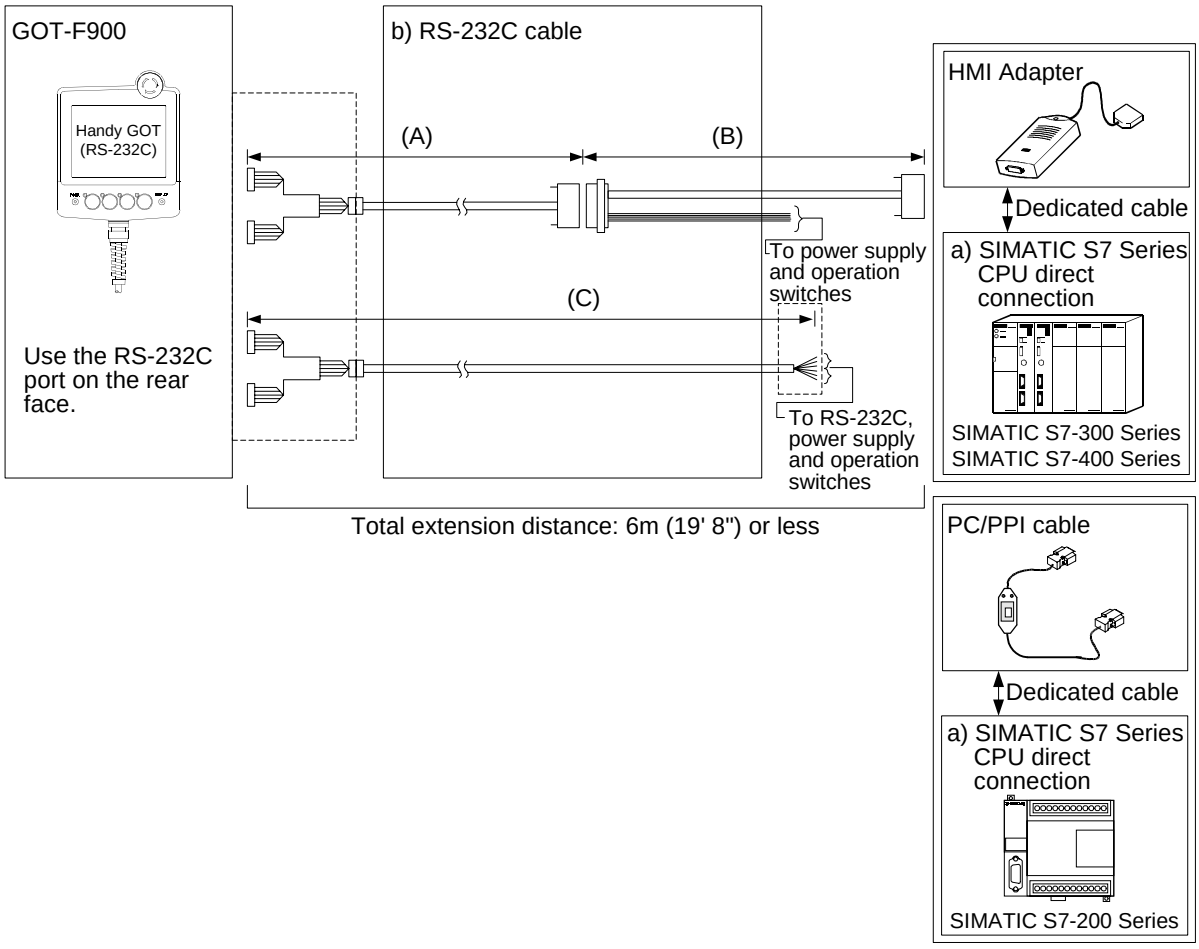
SIMATIC S7-300 Series

| a) SISMAC S7 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| 312IFM<br>313<br>314<br>314IFM<br>315<br>315-2DP<br>316 | 9-pin D-Sub (port of HMI adapter) | Prepared by the user<br><br>6ES7 972-0CA00-0XA0 cable manufactured by Siemens AG is also available. | |

SIMATIC S7-400 Series

| a) SISMAC S7 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| 412-1<br>413-1<br>413-2DP<br>414-1<br>414-2DP<br>416-1<br>416-2DP | 9-pin D-Sub (port of HMI adapter) | Prepared by the user<br><br>Cable 6ES7 972-0CA00-0XA0 manufactured by Siemens AG is also available. | |

**2) F943 Handy GOT**




SIMATIC S7-200 Series

| a) SISMAC S7 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| 212<br>214<br>215<br>216<br>221<br>222<br>224 | 9-pin D-Sub (connector of PC/PPI cable) | (A) F9GT-HCAB-□□M<br>(B) Prepared by the user<br>(C) F9GT-HCAB1-□□M | |

SIMATIC S7-300 Series

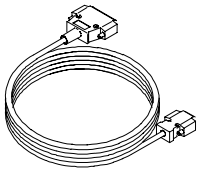
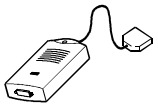
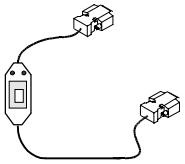
| a) SISMAC S7 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| 312IFM<br>313<br>314<br>314IFM<br>315<br>315-2DP<br>316 | 9-pin D-Sub (port of HMI adapter) | (A) F9GT-HCAB-☐☐M<br>(B) Prepared by the user<br>(C) F9GT-HCAB1-☐☐M | |

SIMATIC S7-400 Series

| a) SISMAC S7-400 | | b) RS-232C cable | Remarks |
|---|---|---|---|
| 412-1<br>413-1<br>413-2DP<br>414-1<br>414-2DP<br>416-1<br>416-2DP | 9-pin D-Sub (port of HMI adapter) | (A) F9GT-HCAB-☐☐M<br>(B) Prepared by the user<br>(C) F9GT-HCAB1-☐☐M | |

- Make sure that the total cable extension distance "(A) + (B)" or (C) is 6m (19' 8") or less.

## 20.2.2 Introduction of Options Manufactured by Siemens AG

| Product name | Model name | Description |
|---|---|---|
| Cable | 6ES7 972-0CA00-0XA0 | This RS-232C cable connects the GOT-F900 (excluding the Handy GOT) and the HMI adapter.  |
| HMI Adapter | 6ES7 972-0CA11-0XA0 | This interface is required to connect the GOT-F900 to the SIMATIC S7-300/400 Series CPU.  |
| PC/PPI cable | 6ES7 901-3BF20-0XA0 | This RS-232C/RS-485 conversion cable is required to connect the GOT-F900 to the PPI port of the SIMATIC S7-200 Series CPU.  |

## 20.3 Setting in SIMATIC S7-200

When connecting the SIMATIC S7-200 Series PLC, the communication specifications of the RS-232C port should be set using the peripheral equipment for the SIMATIC S7-200 Series (STEP7-Micro/WIN).

### 20.3.1 Communication Setting Specifications

Set the baud rate, highest address, etc. of the SIMATIC S7-200 Series PLC.

**1) Setting in the PLC**

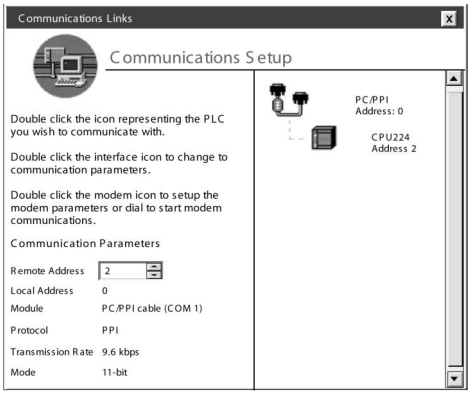
Set the following items using the programming software for the SIMATIC S7-200 Series (STEP7-Micro/WIN32).

| Item | Set value |
|---|---|
| PLC Address | 1 to 31 |
| Highest Address | 31 |
| Baud Rate | 19200 bps |
| Retry Count | 3 |
| Gap Update Factor | 10 |

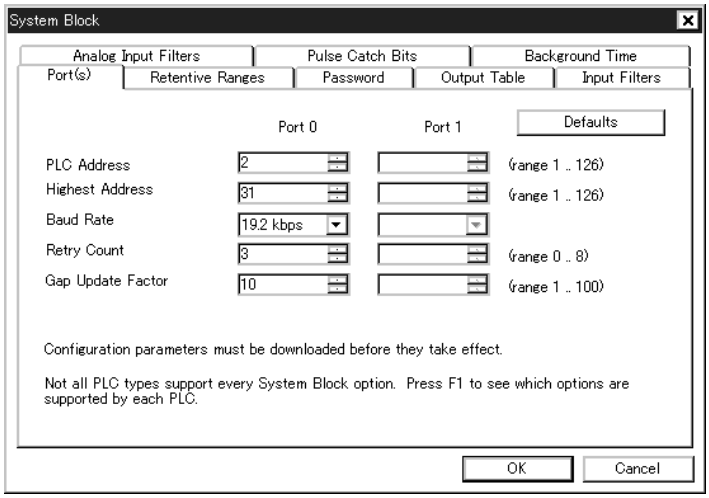
**Procedure**

a) Open STEP7-Micro/WIN32 software.

b) From the menu on the tool bar, select "View"-"Communications".
Set "Remote Address" to the destination PLC station number (The default value is "2".)


Communications Links
Communications Setup
Double click the icon representing the PLC you wish to communicate with.
Double click the interface icon to change to communication parameters.
Double click the modem icon to setup the modem parameters or dial to start modem communications.
Communication Parameters
Remote Address 2
Local Address 0
Module PC/PPI cable (COM 1)
Protocol PPI
Transmission Rate 9.6 kbps
Mode 11-bit
PC/PPI Address: 0
CPU224 Address 2

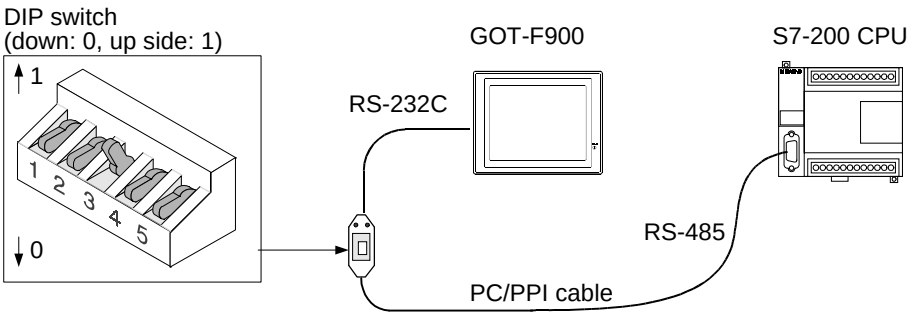
c) From the menu on the tool bar, select "View"-"System Block".
Set "PLC Address" to a value in the range from 1 to 31, "Highest Address" to "31", "Baud Rate" to "19.2 kbps", "Retry Count" to "3", and "Gap Update Factor" to "10".
Click the [OK] button.

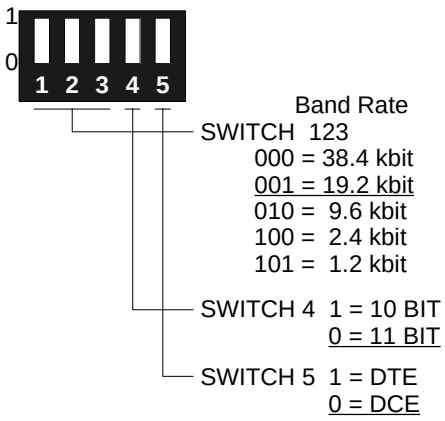

System Block
Analog Input Filters
Pulse Catch Bits
Background Time
Port(s)
Retentive Ranges
Password
Output Table
Input Filters
Port 0
Port 1
Defaults
PLC Address 2 (range 1 .. 126)
Highest Address 31 (range 1 .. 126)
Baud Rate 19.2 kbps
Retry Count 3 (range 0 .. 8)
Gap Update Factor 10 (range 1 .. 100)
Configuration parameters must be downloaded before they take effect.
Not all PLC types support every System Block option. Press F1 to see which options are supported by each PLC.
OK
Cancel

d) Transfer the program to the PLC.

**2) Setting of the PC/PPI cable (6ES7 901-3BF20-0XA0)**

Set the DIP switches as shown below.



### 20.3.2 GOT-F900 Transmission Specifications

**1) Transmission specifications**

The GOT-F900 is set to the following communication specifications.

| Item | | Set value |
|---|---|---|
| Transmission speed | | 19200 bps |
| Data format | Data bit | 8 bits |
| | Parity bit | Provided (even) |
| | Stop bit | 1 bit |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting of the station number**

In the settings in the GOT-F900, the destination station number (DST STA #) corresponds to the PLC address in the SIMATIC S7-200 Series PLC.
And the GOT station number (GOT STA #) corresponds to the GOT-F900 station number. Make sure to set a different value in the range from 0 to 31 to the DST STA # and GOT STA # respectively.

## 20.4 Setting in SIMATIC S7-300/400

When connecting the SIMATIC S7-300/400 Series PLC, the communication specifications and the usage of the RS-232C port should be set using the peripheral equipment for the SIMATIC S7-300/400 Series (STEP7).

### 20.4.1 Communication Setting Specifications

Set the MPI address of the SIMATIC S7-300/400 Series PLC using the programming software for the SIMATIC S7-300/400 Series (STEP7).

| Item | MPI address |
|---|---|
| Personal computer (for programming) | 0 (fixed in MPI network) |
| HMI adapter | 1 (fixed) |
| SIMATIC S7-300/400 Series PLC | 02 to 31 |

The MPI address of the HMI adapter is fixed to "01", and the highest MPI address is "31".
Accordingly, make sure to set the MPI address of the SIMATIC S7-300 Series PLC in the range from 2 to 31.

### 20.4.2 GOT-F900 Transmission Specifications

**1) Transmission specifications**

The GOT-F900 is set to the following communication specifications.

| Item | | Set value |
|---|---|---|
| Transmission speed | | 38400 bps |
| Data format | Data bit | 8 bits |
| | Parity bit | Provided (even) |
| | Stop bit | 1 bit |

- The specifications such as the transmission speed are fixed on the GOT-F900 side, and cannot be changed.

**2) Setting of the MPI address (station number) setting switch**

The GOT-F900 station number corresponds to the MPI address in the SIMATIC S7-300/400 Series PLC.
Accordingly, align the destination station number (or DST STA #) of the GOT-F900 with the MPI address.
If the destination station number of the GOT-F900 is set to "00" or "01", it is treated as "02".

## 20.5 Device Specification Method

This section explains the format used to specify devices of the SIMATIC S7-200/300/400 Series.
For the device range which can be set in the GOT-F900, refer to section 3.3.

### 20.5.1 Device Format in SIMATIC S7-200

| GT Designer version SW5-P (5.13P) or later | | DU/WIN version 2.60 or later | |
|---|---|---|---|
| Bit device (except timer and counter) | ▲ ○○○○ □<br>a) b) c) | Bit device (except timer and counter) | ▲ ○○○○ . □<br>a) b) c) |
| Bit device Word device (timer and counter) | ▲ ○○○○<br>a) b) | Bit device Word device (timer and counter) | ▲ ○○○○<br>a) b) |
| Word device (except timer and counter) | ▲ ○○○○<br>a) b) | Word device (except timer and counter) | ▲ ○○○○<br>a) b) |

**1) Bit device (except timer and counter)**

a) Specify the device symbol in an alphabet.

b) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 1- to 4-digit decimal number (without 0 suppression) | 1- to 4-digit decimal number (with 0 suppression) |

c) Specify the bit position in a 1-digit number (0 to 7).

Example: To specify "M20.5"
Device symbol ..... M
Device (byte) number ..... 20
Bit position ..... 5

**2) Bit device and word device (timer and counter)**

The specification method is equivalent to that of the bit device except "c) Specify the bit position".

a) Specify the device symbol in an alphabet.

b) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 1- to 4-digit decimal number (with 0 suppression) | 1- to 4-digit decimal number (with 0 suppression) |

Example: To specify Timer (T) (present value) "T250"
Device symbol ..... T
Device (byte) number ..... 250

**3) Word device (except timer and counter)**

a) Specify the device symbol in two or three alphabets.

b) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 1- to 4-digit decimal number (with 0 suppression) (Only an even number can be specified.*1) | 1- to 4-digit decimal number (with 0 suppression) (Only an even number can be specified.*1) |

Example: To specify Special memory "MW25"
Device symbol ..... MW
Device (byte) number ..... 25

*1 Except the high speed counter (HC)

## 20.5.2 Device Format in SIMATIC S7-300/400

| GT Designer version SW5-F (5.05F) or later | | DU/WIN | |
|---|---|---|---|
| Bit device | ▲ ○○○○ □<br>a) b) c) | Bit device (except timer and counter) | ▲ ○○○○ . □<br>a) b) c) |
| Word device (timer and counter) | ▲ ○○○○<br>a) b) | Bit device<br>Word device (timer and counter) | ▲ ○○○○<br>a) b) |
| Word device (data register) | D ○○○○ □□□□□<br>a) b) c) | Word device (except timer and counter) | DB ○○○○ . DBW□□□□□<br>a) b) c) |

**1) Bit device**

a) Specify the device symbol in an alphabet.

b) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 3- to 4-digit decimal number (without 0 suppression) | 1- to 4-digit decimal number (with 0 suppression) |

c) Specify the bit position in a 1-digit number (0 to 7).

Example: "M01205"
- Device symbol ..... M
- Device (byte) number ..... 0120
- Bit position ..... 5

**2) Word device (timer and counter)**

The specification method is equivalent to that of the bit device except "c) Specify the bit position".

a) Specify the device symbol in an alphabet.

b) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 3- to 4-digit decimal number (without 0 suppression) | 1- to 4-digit decimal number (with 0 suppression) |

Example: Timer (T) (present value) "T250"
- Device symbol ..... T
- Device (byte) number ..... 250

**3) Word device (data register)**

a) Specify the device symbol in two alphabets ("D" or "DB").

b) Specify the block number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 4-digit decimal number (without 0 suppression) | 1- to 4-digit decimal number (with 0 suppression) |

c) Specify the device (byte) number corresponding to each device.

| GT Designer | DU/WIN |
|---|---|
| 5-digit decimal number (without 0 suppression)<br>(Only an even number can be specified.) | 1- to 5-digit decimal number (with 0 suppression)<br>(Only an even number can be specified.) |

Example: Data register (D) "D102031004"
- Device symbol ..... D
- Block number..... 1020
- Device (byte) number ..... 31004

### 20.5.3 Supplementary Items

**1) Data register specification**

Define data blocks for the SIMATIC S7-300 Series PLC CPU using the STEP7 in advance, and download them to the CPU.

**2) I/O relay**

The English (IEC) expression is used in the GOT-F900.
When the German (SIMATIC) expression is selected in the STEP7, devices E, A and Z are equivalent to I, Q and C respectively.

**3) Device check range**

Because the GOT-F900 does not discriminate the CPU type between the S7-300 Series CPU and the S7-400 Series CPU, the device range is in accordance with "devices which can be monitored".
For the device range which can be set in the GOT-F900, refer to section 2.3.

**4) Peripheral equipment for the SIMATIC S7-300/400 Series**

The STEP7 is the name of the programming software for the SIMATIC S7-300/400 Series.

## 20.6 Caution on Use of SIMATIC S7-200/300/400 Series PLC

When using the GOT-F900 connected to the SIMATIC S7-200/300/400 Series PLC, observe the following cautions on use.

### 20.6.1 Restriction in devices depending on the model

Some devices are not available in the 416-1 and the 416-2DP.

### 20.6.2 Restriction in device specification

Word specification of bit devices and bit specification of word devices are not enabled in the GOT-F900.

## 20.7 Setting of Connected Equipment for GOT

The SIMATIC S7-200/300/400 Series PLC connection parameters can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

**1) GOT-F900 Series**

When the main menu screen change operation is disabled.

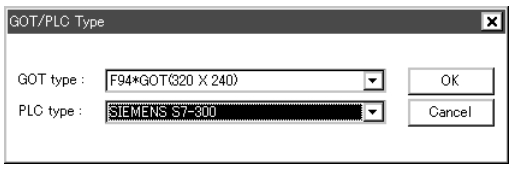
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br><br>The "SET-UP MODE" screen appears. |
| b) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| c) Set the following.<br>PLC TYPE: SIEMENS S7-200<br>SIEMENS S7-300<br>CONNECTION:CPU PORT (RS-232C)<br>(S7-200)<br>DST STATION # : 1 to 31<br>GOT STATION # : 0 to 31<br><br>(S7-300)<br>DST STATION # (STATION #):02 to 31<br>("00" and "01" are treated as "02".)<br>GOT STATION # (–) : – | |

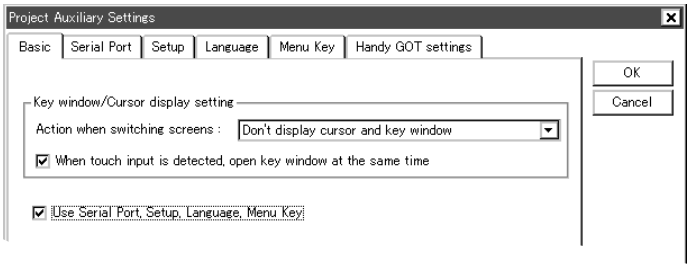
When the main menu screen change operation is enabled.

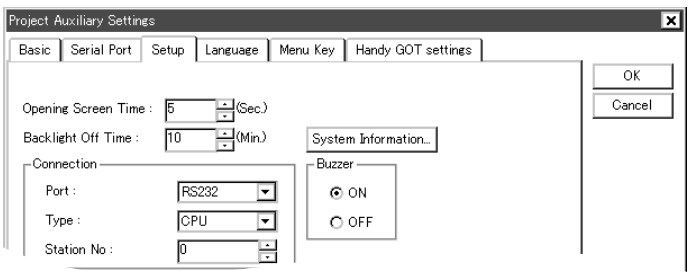
| Operation | Display (screen name) |
|---|---|
| a) Press the upper left corner of the screen. (The position to be pressed can be changed in the GOT and the screen creation software.) | The "SELECT MODE" screen appears. |
| b) Press "OTHER MODE" on the menu. | The "OTHER MODE" screen appears. |
| c) Press "SET-UP MODE" on the menu. | The "SET-UP MODE" screen appears. |
| d) Press "PLC TYPE". | The "PLC TYPE" screen appears. |
| e) Set the following.<br>PLC TYPE: SIEMENS S7-200<br>SIEMENS S7-300<br>CONNECTION:CPU PORT (RS-232C)<br>(S7-200)<br>DST STATION # : 1 to 31<br>GOT STATION # : 0 to 31<br>(S7-300)<br>DST STATION # (STATION #):02 to 31<br>("00" and "01" are treated as "02".)<br>GOT STATION # (–) : – | |

- When the screen data is transferred to the GOT-F900, the old data including the PLC type, connection type, and station number are overwritten.

### 2) GT Designer

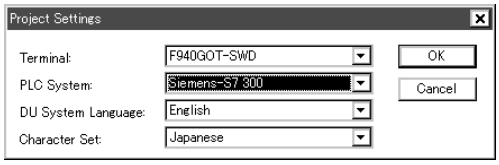
<table>
<tr><th colspan="2">Operation</th><th>Display (screen name)</th></tr>
<tr><td>[Creation]</td><td>a) Open GT Designer.<br><br>b) Click the [New] button.<br> 

c) Set the following.<br>GOT type: F940WGOT (480 × 234) <WIDE><br>F94*GOT (320 × 240)<br>F93*GOT (240 × 80)<br>PLC type: SIEMENS S7-200<br>SIEMENS S7-300<br><br>Selection of "GOT type"<br><table><tr><th>GOT type</th><th>Model name</th></tr><tr><td>F940WGOT(480×234)<WIDE></td><td>F940WGOT</td></tr><tr><td>F94*GOT(320×240)</td><td>F940GOT<br>Handy GOT</td></tr><tr><td>F93*GOT(240×80)</td><td>F930GOT-K<br>F930GOT</td></tr></table>
Click [OK].<br><br>d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>This setting is enabled in the SW5D5C-GOTR-PACKE version A or later.<br>Make "Serial Port", "Setup", "Language" and "Menu Key" valid.<br> 

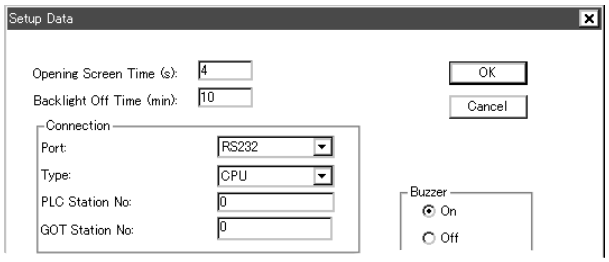
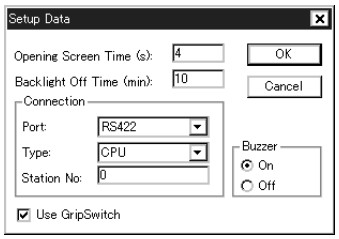
Click the "Setup" tab.<br>In the case of SW5D5C-GOTR-PACKE earlier than version P<br>(Setting is disabled in the S7-200.)<br> 
</td><td>The "Select Project" dialog box appears.<br><br>The "GOT/PLC Type" dialog box appears.<br><br>The "Project Auxiliary Settings" dialog box appears.</td></tr>
</table>

| Operation | | Display (screen name) |
|---|---|---|
| | e) Set the following.<br>Port : RS-232C<br>Type : CPU<br>(S7-200)<br>DST Station No. : 1 to 31<br>GOT Station No. : 0 to 31<br>(S7-300)<br>DST Station No. (Station No.) : 02 to 31<br>("00" and "01" are treated as "02".)<br>GOT Station No. (–) :– | |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open GT Designer.<br>b) Click the [Open] button.<br>c) Open (read) the screen data to be changed.<br>d) On the menu, select "Common"-"GOT/PLC Type". | The "Select Project" dialog box appears.<br><br><br><br>The "GOT/PLC Type" dialog box appears. |

### 3) DU/WIN

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) Open DU/WIN.<br><br>b) On the menu, select "File"-"New".<br>  <br><br>c) Set the following.<br>Terminal: F940WGOT-TWD (V)(H)<br>F940GOT-LWD<br>F940GOT-SWD<br>F930GOT-BWD<br>PLC System: Siemes-S7 300<br>Siemens-S7 200<br><br>Select "Terminal" in accordance with the LC display color. | The "Project settings" dialog box appears. |

| Terminal | Model name |
|---|---|
| F940WGOT (V), (H) | F940WGOT (color) |
| F940GOT-LWD | F940GOT (black and white)<br>Handy GOT (black and white) |
| F940GOT-SWD | F940GOT (color)<br>Handy GOT (color) |
| F930GOT-BWD | F930GOT-K (blue)<br>F930GOT (blue) |

| Operation | | Display (screen name) |
|---|---|---|
| | d) Set CPU direct connection (RS-232C) of the GOT-F900.<br>On the menu, select "View/Project"-"System Settings"-"Setup Data".<br><In the case of version 2.52 or later><br>  <br><br><In the case of earlier than version 2.52><br>  <br><br>e) Set the following.<br>Port: RS-232C<br>Type: CPU<br>(S7-200)<br>DST Station No.: 1 to 31<br>GOT Station No.: 0 to 31<br>(S7-300)<br>DST Station No. (Station No.) : 02 to 31<br>("00" and "01" are treated as "02".)<br>GOT Station No. (–) :– | The "Setup Data" dialog box appears. |
| [Change method] | Change the connection type of the already created data as follows.<br>a) Open DU/WIN.<br>b) On the menu, select "File"-"Open".<br>c) Select and open (read) the file of the screen data to be changed.<br>d) When changing "Terminal" (GOT-F900), select "View/Project"-"System Settings"-"Project settings" on the menu.<br>For the contents of setting, refer to c) in [Creation] above.<br>For selection of RS-232C/RS-422, refer to e) in [Creation] above. | The "Open" dialog box appears.<br>The "Project settings" dialog box appears. |

## 20.8 Cable Diagram

This section explains cable diagrams to connect the GOT-F900 and the SIMATIC S7-200/300/400 Series PLC manufactured by Siemens AG.

### 1) Cable for the GOT and the PLC manufactured by Siemens AG

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-232C connection<br>SIMATIC S7-200 Series<br>6ES7 901-3BF20-0XA0 cable manufactured by Siemens AG | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | RS-232C ↔ RS-485 | SIMATIC S7 (PC/PPI port)<br>5 1<br>9 6<br>9-pin D-Sub, male |
| b) | RS-232C connection<br>SIMATIC S7-300/400 Series<br>Prepared by the user<br>6ES7901-1BF00-0XA0 cable manufactured by Siemens AG is available also. | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female | CD(DCC)(1) — (1)CD(DCC)<br>RD(RXD)(2) — (2)RD(RXD)<br>SD(TXD)(3) — (3)SD(TXD)<br>ER(DTR)(4) — (4)ER(DTR)<br>SG(GND)(5) — (5)SG(GND)<br>DR(DSR)(6) — (6)DR(DSR)<br>RS(RTS)(7) — (7)RS(RTS)<br>CS(CTS)(8) — (8)CS(CTS)<br>NC (9) — (9)NC<br>Shell | SIMATIC S7 (HMI Adapter)<br>5 1<br>9 6<br>9-pin D-Sub, female |

**2) Cable for the F943 Handy GOT and the PLC manufactured by Siemens AG**

When using the Handy GOT RH model, refer to the cable diagrams below for the RS-422/RS-232C connector, but not the wiring for the power supply, the operation switches, and the emergency stop switch because it is different. For details, refer to Chapter 5.

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | | Application | Connection diagram | Application |
|---|---|---|---|---|---|
| a) | F9GT-HCAB-3M<br>F9GT-HCAB-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | To cable prepared by user<br>1 13<br>14 25<br>25-pin D-Sub, male |
| b) | F9GT-HCAB1-3M<br>F9GT-HCAB1-10M | RS-422 connection<br>RS-232C connection | Dedicated connector on Handy GOT side | The connector on the leader side of the Handy GOT is dedicated, and cannot be prepared by the user. | Loose wires (no connector) |
| c) | SIMATIC S7-200 Series<br>Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>R(4) (1) CD(DCC)<br>BK(2) (2) RD(RXD)<br>O(10) (3) SD(TXD)<br>(5) SG(GND)<br>(9) NC<br>Shell<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M<br>Wire the power supply, the operation switches and the emergency stop switch. | 6ES7 901-3B F00-0XA0 (PC/PPI cable)<br>5 1<br>9 6<br>9-pin D-Sub, male |
| d) | SIMATIC S7-300/400 Series<br>Prepared by the user | RS-232C connection | To cable F9GT-HCAB or F9GT-HCAB1 on Handy GOT side | F9GT-HCAB-□□M<br>Drain wire (1) FG(class D grounding)<br>R(4) (1) CD(DCC)<br>BK(2) (2) RD(RXD)<br>W(3) (3) SD(TXD)<br>O(10) (4) ER(DTR)<br>GR(5) (5) SG(GND)<br>Y(6) (6) DR(DSR)<br>BR(7) (7) RS(RTS)<br>(8) CS(CTS)<br>(9) NC<br>Shell<br>PL(12) DC24VG<br>PK(13) DC24VG<br>FGR(14) SW common<br>SB(15) SW1<br>BK/W(16) SW2<br>R/W(17) SW3<br>GR/W(18) SW4<br>BR/W(21) ES1<br>Y/W(22) ES1<br>BL/W(24) DC24V+<br>GY/W(25) DC24V+<br>F9GT-HCAB1-□□M<br>Wire the power supply, the operation switches and the emergency stop switch. | SIMATIC S7 (HMI Adapter)<br>5 1<br>9 6<br>9-pin D-Sub, female |

## 20.9 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the SIMATIC S7-200/300/400 Series PLC manufactured by Siemens AG.

### 1) GOT-F900

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "COMMUNICATION ERROR OCCURS" is displayed when a screen changeover or numeric data input is performed on the GOT-F900 screen. | The power of the SIMATIC S7-200/300/400 Series PLC is turned off.<br>• Cause<br>Communication is disabled because the power of the SIMATIC S7-200/300/400 Series PLC is turned off.<br>• Countermeasures<br>Turn on the power. | From first product | From first product | From first product |
| | Something is wrong with the cable between the GOT-F900 and the SIMATIC S7-200/300/400 Series PLC.<br>• Causes<br>The wrong cable is used or the connection is bad.<br>• Countermeasures<br>Check the cable. | | | |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | Changeover to a nonexistent screen by a touch key or the SIMATIC S7-200/300/400 Series PLC was tried.<br>• Cause<br>The changeover destination screen has not been created yet.<br>• Countermeasures<br>Create the screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | A nonexistent screen was tried to be displayed.<br>• Cause<br>The screen No. #### has not been created yet.<br>• Countermeasures<br>Create the screen. | From first product | 6.00 or later | 4.00 or later |
| "DISPLAY SCREEN IS NOT AVAILABLE." is displayed on the GOT-F900 screen. | A device that does not exist in the SIMATIC S7-200/300/400 Series is referenced. (Example: While an S300 is connected, a device exists only in the S400 is specified for numeric input.)<br>• Cause<br>On the changeover destination screen (excluding the head screen), a nonexistent device in the connected SIMATIC S7-200/300/400 Series PLC is specified.<br>• Countermeasures<br>Check the devices used on the head screen. | – | Earlier than 6.00 | Earlier than 4.00 |
| | There is an error on the screen to be displayed.<br>• Cause<br>One of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the placement of screen objects. | | | |

| Contents of trouble | Check points and countermeasures | OS version | | |
|---|---|---|---|---|
| | | F940W | F940 | F930 |
| "DISPLAY SCREEN IS NOT AVAILABLE. (NO. ####)" is displayed on the GOT-F900 screen. | The display screen contains an error.<br><br>• Causes<br>A device that does not exist in the connected PLC is referenced on the screen No. ####, or one of the screen objects is placed outside the available screen area.<br>• Countermeasures<br>Check the devices used and placement of screen objects. | From first product | 6.00 or later | 4.00 or later |
| "DATA IS NOT FOUND." is displayed on the GOT-F900 screen. | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | – | Earlier than 6.00 | Earlier than 4.00 |
| | A device that does not exist in the SIMATIC S7-200/300/400 Series PLC was referenced. (Example: While an S300 is connected, a device exists only in the S200 is specified for numeric input.)<br><br>• Cause<br>On the head screen, a nonexistent device in the connected SIMATIC S7-200/300/400 Series PLC is specified.<br>(The head screen is the screen No. 1 in the GT Designer, and the screen No. 0 in the DU/WIN.)<br>• Countermeasures<br>Check the devices used on the head screen. | | | |
| | There is not data because the unit is new or the memory clear has been executed.<br><br>• Cause<br>There is no screen data.<br>• Countermeasures<br>Write the screen data using the screen creation software. | From first product | 6.00 or later | 4.00 or later |
| "CAN NOT WRITE TO PLC MEMORY." is displayed on the GOT-F900 screen. | This error is not displayed. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 |
| "CAN NOT WRITE." is displayed on the GOT-F900 screen. | This error is not displayed. | 1.10 or later | 6.10 or later | 4.10 or later |
| "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |
| "PLC IS RUNNING." is displayed on the GOT-F900 screen. | This error is not displayed. | From first product | From first product | From first product |

### 2) Software

| | Contents of trouble | Check points and countermeasures |
|---|---|---|
| Screen creation software | Communication with the screen creation software and screen data cannot be transferred. | A SIMATIC S7-200/300/400 Series PLC, bar code reader or printer is connected.<br><br>• Causes<br>The RS-232C connector to which the personal computer is connected is set to be used for another piece of equipment.<br>• Countermeasures<br>In the GOT-F900, select by hand "SELECT MODE"-"OTHER MODE"-"DATA TRANSFER".<br>Or set a bar code printer to invalid and a printer to "DON'T USE". |
| | | Something is wrong with the cable between the GOT-F900 and the personal computer.<br><br>• Causes<br>The connected cable is not proper. Or cable connection is not correct.<br>• Countermeasures<br>Check the cable. |

# MEMO

# 21. Connection of Printer

This chapter explains the procedure to connect the GOT-F900 Series display unit to the printer.
The printer cannot be used if another equipment is connected to the RS-232C port of the GOT-F900.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the printer.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 21.1 |
| System Configuration | You can select the configuration between the GOT and the printer and proper cables. | 21.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Printer Communication Setting | You can learn the communication specifications.<br>Transmission specifications and communication format: The GOT communication specifications. Align the setting between the GOT and the printer. (21.3.1) | 21.3 |
| Cautions on Use of Printer | You can learn the cautions on connecting the personal computer while the printer is connected to the GOT. | 21.4 |
| Setting of Connected Equipment for GOT | Set the communication specifications of the RS-232C port for the printer using the GOT or the screen creation software. | 21.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for a printer/GOT connection | 21.6 |

## 21.1 System Condition

When connecting the printer, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.

Compatibility when connecting the printer

| GOT-F900 Series | COM port | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|
| | RS-422 | RS-232C | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – |
| F930GOT | – | ✓ | 1.00 | SW1-H | 2.20 |
| F930GOT-K | – | ✓ | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | 1.00 | SW1-A | 2.00 |
| F940WGOT | – | ✓ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | – | –*1 | 1.00 | SW1-D | 2.10 |
| F943 Handy GOT | – | –*1 | 1.00 | SW1-D | 2.10 |

- The screen creation software version corresponds to the model of the GOT-F900 Series.

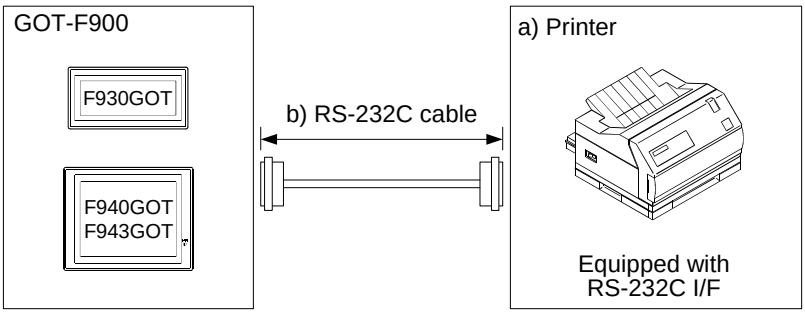
*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

## 21.2 System Configuration

The printer can be connected to the RS-232C port of the GOT-F900. This section explains the cable required to connect the printer.

### 21.2.1 Configuration for Printer Connection

Connect the GOT-F900 to the printer.




| a) Printer | | b) RS-232C cable |
|---|---|---|
| RS-232C port on printer side | 25-pin D-Sub, male | Prepared by the user |
| | 9-pin D-Sub, male | Prepared by the user |

### 21.2.2 Applicable port on GOT-F900

The printer can be connected to a RS-232C port on the GOT-F900 if it is not occupied with the setting for other equipment such as a PLC, bar code reader or printer.
F940WGOT is equipped with the two RS-232C ports. Either port is applicable for connecting a printer.

## 21.3 Printer Communication Setting

When connecting the printer, the transmission specifications and the communication format described below should be satisfied in the printer.

### 21.3.1 Transmission Specifications and Communication Format

Set the transmission specifications and the communication format of the printer as shown in the table below.

**1) Applicable printer**

The printer which can be connected via ESC/P (Epson Standard Code for Printer) control code and the RS-232C interface is applicable.

**2) Transmission specifications**

| Setting item | | | Communication setting (default value in [ ]) | Remarks (Write set value of printer.) |
|---|---|---|---|---|
| GOT-F900 | GT Designer | DU/WIN | | |
| SPEED | Speed | Speed | [300],600,1200,2400,4800,9600 | |
| DATA BIT | Data Bit | Databits | [7 bits],8 bits | |
| STOP BIT | Stop Bit | Stopbits | [1 bit],2 bits | |
| PARITY | Parity | Parity | [Even], Odd, None | |
| HANDSHAKING | Handshaking | Handshake | [DTR/DSR], XON/XOFF | |
| PRINTER | – | – | [DON'T USE], USE | Select "DON'T USE" except special cases. |

- For the setting of "DON'T USE/USE" of the printer, refer to section 21.5.

**3) Setting of "USE/DON'T USE"**

In "SERIAL PORT (RS-232C)" in the GOT-F900, set "PRINTER" to "USE" or "DON'T USE".
When "PRINTER" is set to "DON'T USE", the RS-232C port of the GOT-F900 is automatically changed over in accordance with each communication. When "PRINTER" is set to "USE", only the printer is available.
(When the power is turned off once, then turned on again, the changed setting becomes valid.)

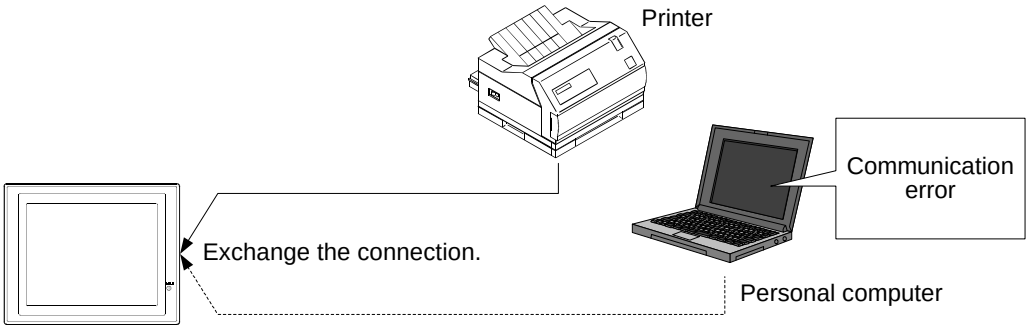
- Have in mind that screen data transfer, sequence program transfer or sequence program monitoring is disabled while "PRINTER" is set to "USE". For the details, refer to section 21.4.

## 21.4 Cautions on Use of Printer

When using the GOT-F900 connected to the printer, observe the following cautions on use.

### 21.4.1 Caution on printer setting

When "PRINTER" is set to "USE" in "SERIAL PORT(RS-232C)" in the GOT-F900, the RS-232C port of the GOT-F900 is occupied for the printer.
In this status, even if a personal computer is connected and screen data transfer or sequence program (two-port interface function) transfer/monitoring is executed, the GOT-F900 does not automatically change to the transfer screen. (And a communication error occurs in the application software installed in the personal computer.)




**1) Avoidance Method**

When "PRINTER" is set to "USE", communication error can be avoided by executing an either operation.

| | |
|---|---|
| Screen data transfer | Read and display the "SELECT MODE" screen, then select "OTHER MODE"-"DATA TRANSFER". |
| Sequence program transfer/monitoring | Set "PRINTER" to "DON'T USE", turn off the power, then turn it on again. |

**2) Priority of the RS-232C Port Functions**

From the functions having the highest priority, the system checks whether the setting is provided. If a certain function is set, functions having lower priority are disabled.
For example, when the PLC connection destination is set to RS-232C or when the bar code reader is set valid, functions having lower priority (such as screen data transfer and sequence program transfer/monitoring) are disabled.

| Priority | RS-232C function | DON'T USE | USE |
|---|---|---|---|
| 1 | Connected equipment (PLC, general-purpose equipment) | ✓ | – |
| 2 | Bar code reader | ✓ | – |
| 3 | Printer | ✓ | ✓ |
| 4 | Two-port interface function *1 | ✓ | – |
| 5 | Screen data transfer mode | ✓ | – |

*1 This function is valid only in CPU direct connection in the FX/A/QnA/Q Series. (This function is valid also in serial communication connection in the QnA/Q Series.)

When all communications should be valid, set "PRINTER" to "DON'T USE".
However, when the alarm history should be printed in real time at occurrence of alarms, "PRINTER" should be set to "USE".

### 21.4.2 Concurrent use of microcomputer and printer

When the microcomputer and the printer are used at the same time, the transmission specifications (such as the communication speed, the parity and the data length) are shared.
Accordingly, the transmission specifications should be equivalent between the microcomputer and the printer.

## 21.5 Setting of Connected Equipment for GOT

The printer can be set using the GOT-F900 Series or the screen creation software GT Designer and DU/WIN.

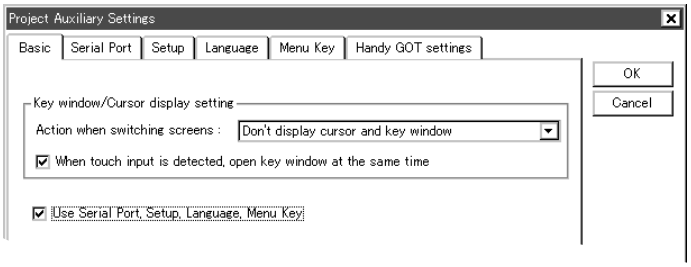
### 1) GOT-F900 Series

When the main menu screen change operation is disabled.

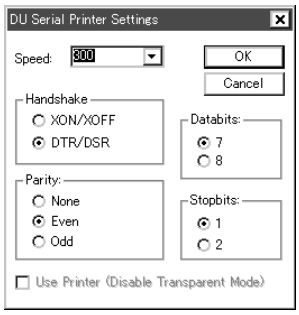
| Operation | Display (screen name) |
|---|---|
| a) While pressing and holding the upper left corner of the screen, turn on the power. Keep holding the upper left corner for about 25 seconds more.<br>Then, press "END" at the upper right corner. | The "LANGUAGE" screen appears.<br><br>The "SET-UP MODE" screen appears. |
| b) Press "SERIAL PORT (RS-232C)".<br>c) Set the transmission specifications for communication with the printer.<br>Set "PRINTER" to "DON'T USE".<br>For the available transmission specifications, refer to section 21.3. | The "SERIAL PORT" screen appears. |

- When the screen data is transferred from screen creation software (GT Designer or DU/WIN) to the GOT-F900, the old data including the PLC type, connection type, and station number (excluding the printer status) are overwritten.

### 2) GT Designer

| Operation | | Display (screen name) |
|---|---|---|
| [Creation] | a) Open GT Designer.<br>b) Read the file of the screen data for which printer connection is to be set.<br>c) Set the transmission specifications.<br>On the menu, select "Common"-"Auxiliary Settings"-"Project".<br>  <br>On the "Basic" tab, check "Use Serial Port, Setup, Language, Menu Key".<br>Select the "Serial Port" tab.<br> <br>To "Speed", "Hand shaking", etc., set proper contents within the transmission specifications range for communication with the printer.<br>After setting, click the [OK] button.<br>For the available transmission specifications, refer to section 21.3. | The "Project Auxiliary Settings" dialog box appears. |

**3) DU/WIN**

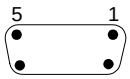
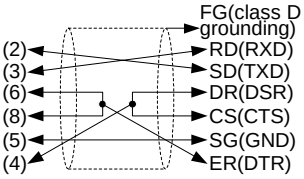
| Operation | | Display (screen name) |
|---|---|---|
| [Creation]<br><br>For selection of RS-232C/RS-422, refer to e) in [Creation] above. | a) Open DU/WIN.<br>b) Read the file of the screen data for which printer connection is to be set.<br>c) Set the transmission specifications.<br>Select "View/Project"-"System Settings"-"DU Printer" on the menu.<br>  <br>Set properly "Speed", "Handshake", etc., within the transmission specifications range for communication with the printer.<br>After setting, click the [OK] button.<br>For the available transmission specifications, refer to section 21.3. | The "DU Printer Settings" dialog box appears. |

## 21.6 Cable Diagram

This section explains a cable diagrams to connect the GOT-F900 and the printer (equipped with the RS-232C interface).

**1) Cable for the GOT and the printer**

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | Prepared by the user<br>RS-232C connection | GOT-F900<br>  <br>9-pin D-Sub, female |  | Printer |

# 22. Connection of Bar Code Reader

This chapter explains the procedure to connect the GOT-F900 Series display unit to the bar code reader.
If equipment such as PLC or printer is connected to the RS-232C port of the GOT-F900, the bar code reader cannot be connected.

### Connection Procedure

This section introduces the procedure to connect the GOT-F900 to the bar code reader.

*1.* Preparation

| Item name | Description | Reference |
|---|---|---|
| System Condition | You can learn the connection availability as well as the version of the GOT-F900 OS and the screen creation software. | 22.1 |
| Connection Configuration | You can select the configuration between the GOT and the bar code reader and proper cables. | 22.2 |

*2.* Setting

| Item name | Description | Reference |
|---|---|---|
| Bar Code Reader Communication Setting | You can learn the communication specifications and the contents of devices. | 22.3 |
| Transmission Specifications and Communication Format | The communication specifications and the format of the GOT. Align the setting in the bar code reader with the setting in the GOT. | 22.3.1 |
| Bar Code Reader Control Devices | Functions of control devices of the bar code reader. | 22.3.2 |
| Bar Code Data Setting | Rules on how the bar code data read by the bar code reader is stored. | 22.3.3 |
| Sequence Program Example | The outline of the sequence program. | 22.3.4 |
| Caution on Use of Bar Code Reader | You can learn the cautions on connecting the personal computer while the bar code reader is connected. | 22.4 |
| Setting of Connected Equipment for GOT | Set the devices used in communication with the PLC using the screen creation software. | 22.5 |

*3.* Others

| Item name | Description | Reference |
|---|---|---|
| Cable Diagram | Cable diagrams for bar code reader/GOT connection | 22.6 |
| Troubleshooting | Description of errors and how to fix them | 22.7 |

## 22.1 System Condition

When connecting the bar code reader, check the COM port designation, the OS version of the GOT-F900, and applicable versions of the screen creation software.
While the screen data is transferred from a personal computer or a printer is used in another mode in the GOT, the communication with a bar code reader is disabled because the RS-232C port is already occupied.

Compatibility when connecting the bar code reader

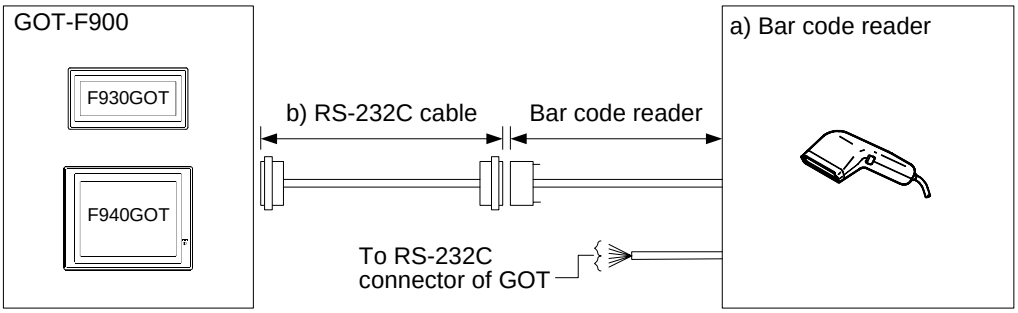
| GOT-F900 Series | COM port | | OS version of GOT-F900 | Version of screen creation software | |
|---|---|---|---|---|---|
| | RS-422 | RS-232C | | GT Designer | DU/WIN |
| F920GOT-K | – | – | – | – | – |
| F930GOT | – | ✓ | 2.00 | SW1-H | 2.20 |
| F930GOT-K | – | ✓ | 4.60 | SW5-26C | 2.70 |
| F940GOT | – | ✓ | 2.00 | SW1-H | 2.20 |
| F940WGOT | – | ✓ | 1.00 | SW5-F | 2.50 |
| F940 Handy GOT | – | –*1 | 2.00 | SW1-H | 2.20 |
| F943 Handy GOT | – | –*1 | 2.00 | SW1-H | 2.20 |

*1 The RS-232C port for the Handy type GOT is provided inside the rear cover. As a result, environmental protection is lost when using this port and such a connection is not practical. (The Handy GOT can be connected as the final unit in a string of two or more GOTs.)

## 22.2 Connection Configuration

The bar code reader can be connected to the RS-232C port of the GOT-F900. This section explains the cable and the option required for connection.

### 22.2.1 Configuration for Bar Code Reader Connection




| a) Bar code reader | b) RS-232C cable |
|---|---|
| Check the shape at end of cable of bar code reader used. | Prepared by the user |

## 22.3 Bar Code Reader Communication Setting

The GOT can be connected to a bar code reader which satisfies the transmission specifications and the communication format shown below.

### 22.3.1 Transmission Specifications and Communication Format

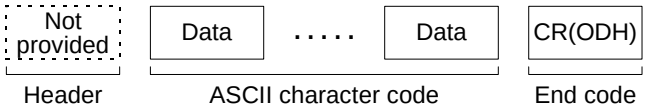
Set the transmission specifications and the communication format of the bar code reader as shown in the table below. For the setting method, refer to the manual of the bar code reader.

**1) Transmission Specifications**

| Item | | Set value | Remarks |
|---|---|---|---|
| Transmission speed | | 9600 bps | |
| Data format | Data bit | 8 bits | |
| | Parity bit | Provided (even) | |
| | Stop bit | 1 bit | |

- The transmission specifications and the communication format are fixed on the GOT-F900 side, and cannot be changed. Align the settings in the bar code reader with the settings in the GOT-F900.

**2) Communication Format**

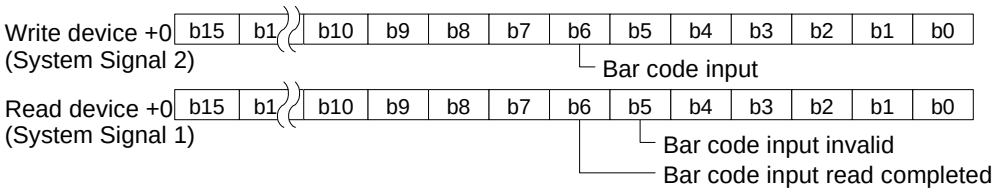


### 22.3.2 Bar Code Reader Control Devices

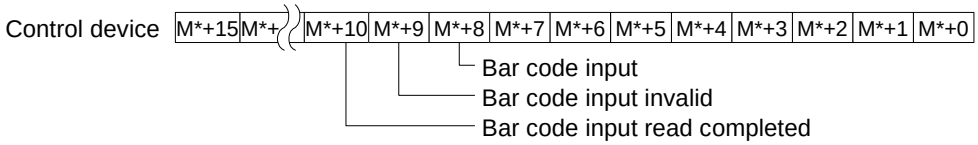
The information on the bar code reader communication status and bar code input start can be controlled from the connected equipment (such as PLC).
Set devices used to control the bar code reader using the screen creation software. This section describes assignment of devices set by the screen creation software and their functions.

**1) Device Assignment**

a) GT Designer


Write device +0
(System Signal 2)
b15 b1 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0
Bar code input
Read device +0
(System Signal 1)
b15 b1 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0
Bar code input invalid
Bar code input read completed

b) DU/WIN

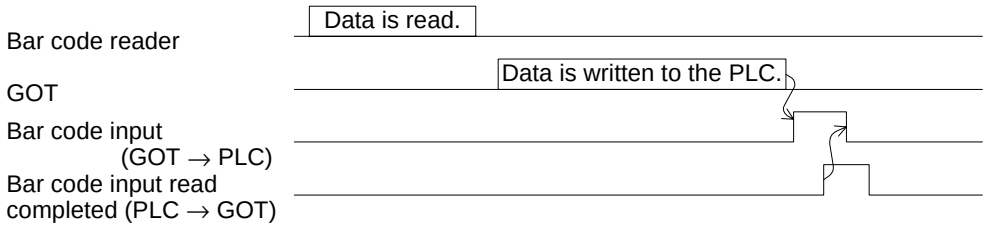



| Signal name | GT Designer<br>System information | DU/WIN<br>Control device | Data direction |
|---|---|---|---|
| Bar code input | b6 of head write device +0 | M*+8 | GOT → Connected equipment |
| Bar code input invalid | b5 of head read device +0 | M*+9 | GOT ← Connected equipment |
| Bar code input read completed | b6 of head read device +0 | M*+10 | GOT ← Connected equipment |

- For the method to assign control devices, refer to Section 22.5.

**2) Signal Functions**

| Signal name | |
|---|---|
| Bar code input | Because this signal becomes ON when the data read by the bar code reader is stored in the PLC, the write timing can be confirmed using this signal. In order to set this signal to OFF, set to ON the bar code input read completed signal. |
| Bar code input invalid | When this bit becomes ON after a bar code input, the bar code input becomes invalid. The data read by the GOT-F900 is cleared. |
| Bar code input read completed | This signal sets the bar code input signal from ON to OFF. |




In either of the following conditions, the data read by the bar code reader is not written to the PLC.
When the bar code input invalid signal is ON
When the bar code input read completed signal remains ON.
When the bar code input signal is ON

### 22.3.3 Bar Code Data Setting

The bar code data read by the bar code reader is written from the GOT-F900 to the connected equipment (PLC).
Set word device to be written to the connected equipment using "Bar Code Settings" in the screen creation software.

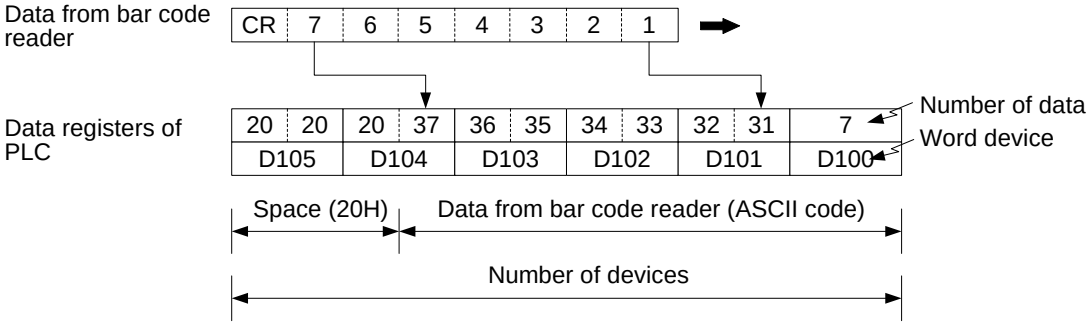
| Setting item | Description |
|---|---|
| Word device | Specify the head word device to be written to the connected equipment.<br>(Excluding C200 to C255 (32 bits) high speed counter of FX Series PLC)<br>For the device range specifications, refer to section 3.3. |
| Number of devices (word device quantity specification) | Specify the number of word devices.<br>One word (one point) stores 2 characters of the ASCII code data transmitted from the bar code reader. The allowable setting range is from 2 to 32 points. (The head device stores the number of data, ASCII code data, read from the bar code reader.) |

**1) Rules of Data Storage**

The data is stored in the ASCII code format in word devices in the ascending order of the word device number. If the read data is larger than the specified number of devices, the excessive data is cut off. If the read data is smaller than the specified number of devices, space characters (20H) are provided in vacant devices.

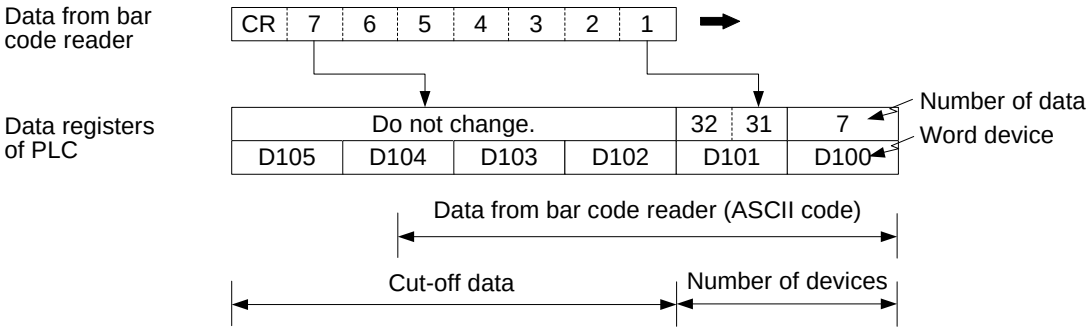
a) When the number of data read from the bar code reader is equivalent to or less than the specified number of devices

Data read from the bar code reader: 1234567
Write destination device: D100
Number of devices: 6


Data from bar code reader
CR 7 6 5 4 3 2 1
Data registers of PLC
20 20 20 37 36 35 34 33 32 31 7
D105 D104 D103 D102 D101 D100
Number of data
Word device
Space (20H)
Data from bar code reader (ASCII code)
Number of devices

b) When the number of data read from the bar code reader is larger than the specified number of devices

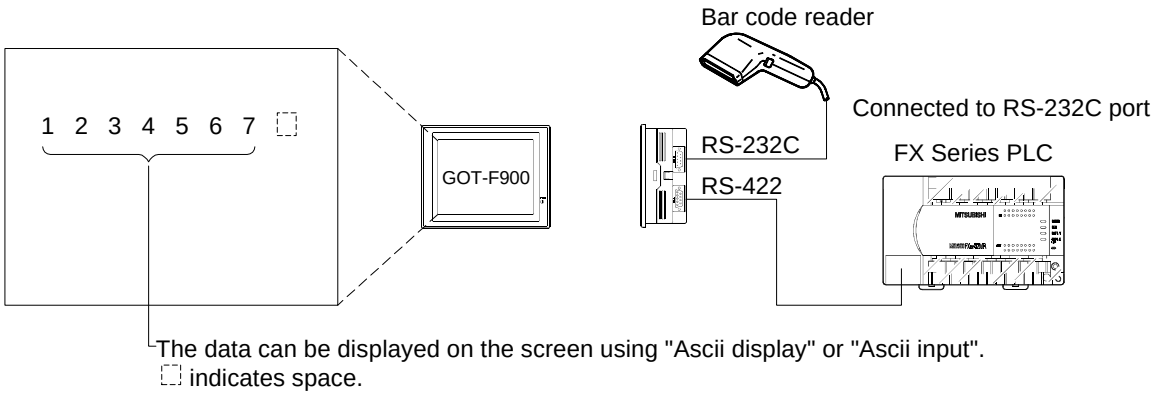
Data read from the bar code reader: 1234567
Write destination device: D100
Number of devices: 2


Data from bar code reader
CR 7 6 5 4 3 2 1
Data registers of PLC
Do not change. 32 31 7
D105 D104 D103 D102 D101 D100
Number of data
Word device
Data from bar code reader (ASCII code)
Cut-off data
Number of devices

If the read data exceeds the specified number of devices, the excessive portion is not stored but cut off.
D100 stores all the numbers of data including the excessive portion. Check D100 to see whether the data is correctly written.
The specified head word device stores all the numbers of data without regard to the specified number of devices.

### 22.3.4 Sequence Program Example

This section explains a program when the screen data is created using the GT Designer.


Bar code reader
1 2 3 4 5 6 7
GOT-F900
RS-232C
RS-422
Connected to RS-232C port
FX Series PLC
The data can be displayed on the screen using "Ascii display" or "Ascii input".
indicates space.

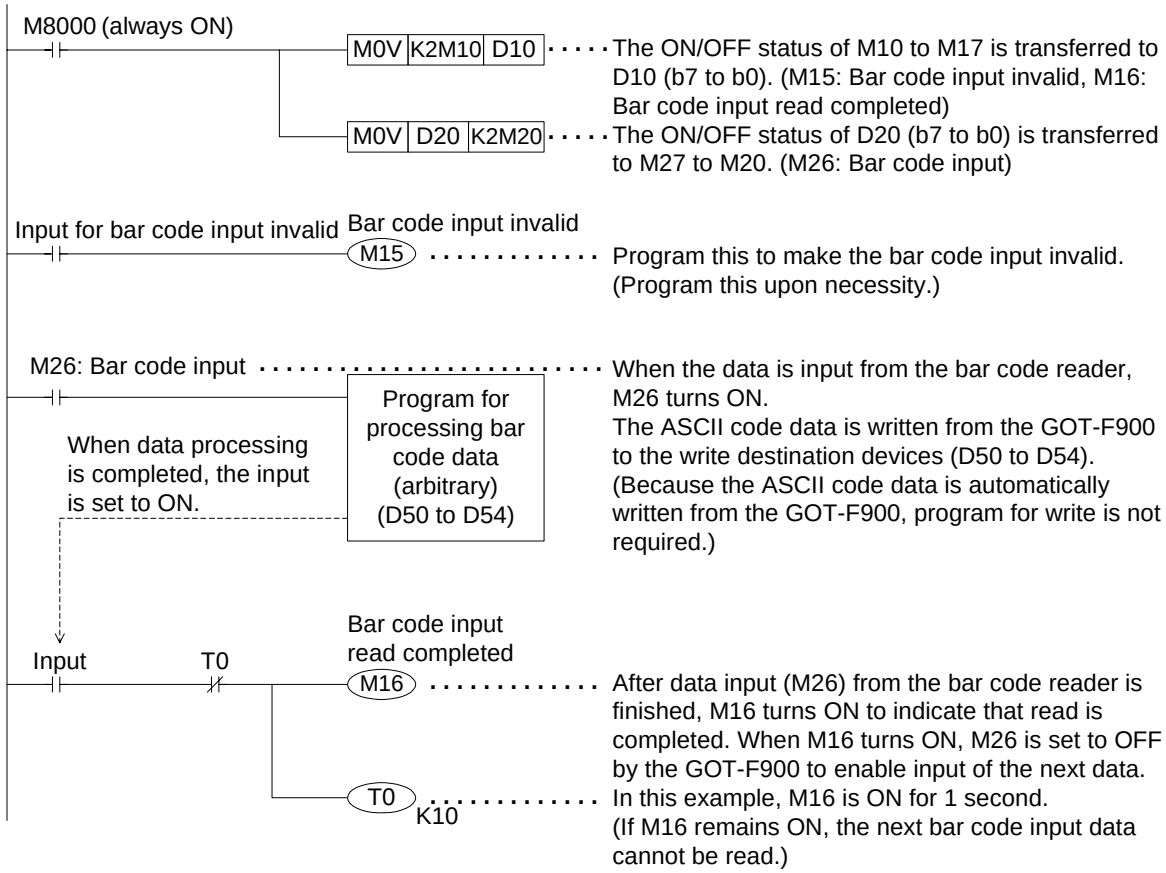
**1) Occupied device**

a) System Information Setting
Read device: D10 (b5 and b6 are occupied.)
Write device: D20 (D20 b6 is occupied.)

b) Bar Code Setting (write destination device and number of devices)
Write destination device: D50
Number of devices: 5 (D50 to D54 are occupied.)

c) Other setting
M15: Bar code input invalid
M16: Read of bar code input complete

**2) Program example**

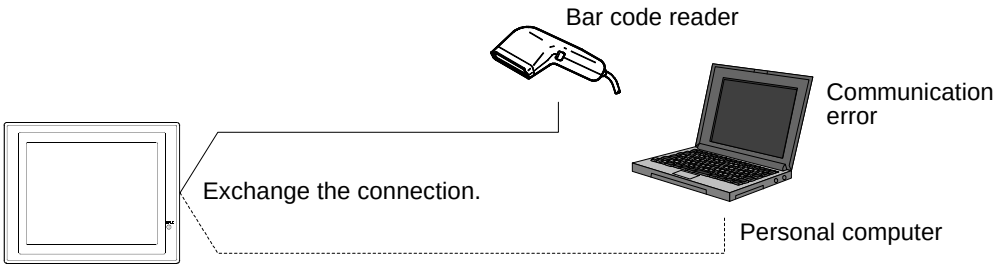

M8000 (always ON)
M0V K2M10 D10
The ON/OFF status of M10 to M17 is transferred to D10 (b7 to b0). (M15: Bar code input invalid, M16: Bar code input read completed)
M0V D20 K2M20
The ON/OFF status of D20 (b7 to b0) is transferred to M27 to M20. (M26: Bar code input)
Input for bar code input invalid
Bar code input invalid
M15
Program this to make the bar code input invalid. (Program this upon necessity.)
M26: Bar code input
When the data is input from the bar code reader, M26 turns ON.
The ASCII code data is written from the GOT-F900 to the write destination devices (D50 to D54). (Because the ASCII code data is automatically written from the GOT-F900, program for write is not required.)
Program for processing bar code data (arbitrary) (D50 to D54)
When data processing is completed, the input is set to ON.
Input
T0
Bar code input read completed
M16
After data input (M26) from the bar code reader is finished, M16 turns ON to indicate that read is completed. When M16 turns ON, M26 is set to OFF by the GOT-F900 to enable input of the next data.
T0
K10
In this example, M16 is ON for 1 second.
(If M16 remains ON, the next bar code input data cannot be read.)

## 22.4 Caution on Use of Bar Code Reader

When using the bar code reader connected to the GOT-F900, observe the following cautions on use.

### 22.4.1 Caution on bar code reader setting

When "Bar code reader" is set to "USE" in the GOT-F900, the RS-232C port of the GOT-F900 is occupied by the bar code reader.
In this status, even if a personal computer is connected and screen data transfer or sequence program (two-port interface function) transfer/monitoring is tried, the GOT-F900 does not automatically change to the transfer screen. (And a communication error occurs in the application software installed in the personal computer.)
In the F940WGOT, refer to the description below when two RS-232C ports are used (to connect the PLC, the bar code reader, etc.).




**1) Avoidance Method**

When "Bar code reader" is set to "USE", communication error can be avoided by executing an either operation.

| | |
|---|---|
| Screen data transfer | Read and display the "SELECT MODE" screen, then select "OTHER MODE"-"DATA TRANSFER". |
| Sequence program transfer/monitoring | Set "Bar code reader" to "DON'T USE". |

**2) Priority of the RS-232C Port Functions**

From the functions having the highest priority, the system checks whether the setting is provided. If a certain function is set, functions having lower priority are disabled.
For example, when the PLC connection destination is set to RS-232C or when the bar code reader is set valid, functions having lower priority (such as data transfer and sequence program transfer/monitoring) are disabled.

| Priority | RS-232C function |
|---|---|
| 1 | Connected equipment (PLC, general-purpose equipment) |
| 2 | Bar code reader |
| 3 | Printer |
| 4 | Two-port interface function *1 |
| 5 | Screen data transfer mode |

*1 This function is available only in CPU direct connection in the FX/A/QnA/Q Series. (This function is available also in serial communication connection in the QnA/Q Series.)

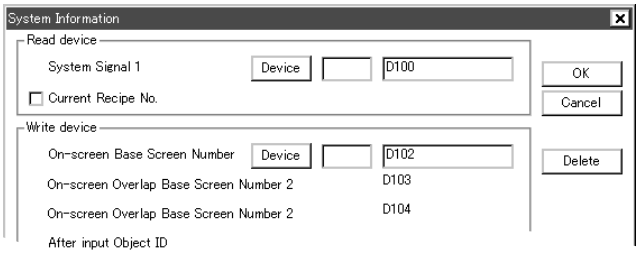
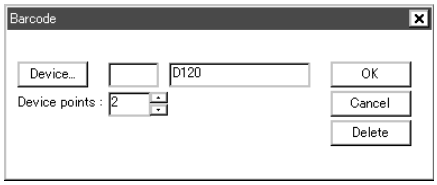
## 22.5 Setting of Connected Equipment for GOT

The setting of connection to the bar code reader can be executed using the screen creation software GT Designer and DU/WIN.

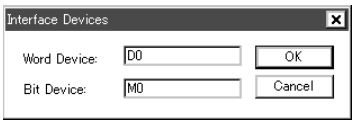
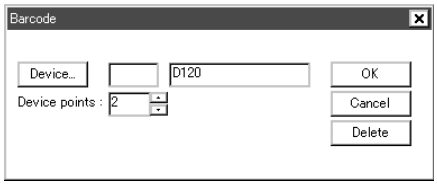
**1) GOT-F900 Series**

Connection of the bar code reader cannot be set in the GOT-F900 Series units.

**2) GT Designer**

| Operation | | Display (screen name) |
|---|---|---|
| [Setting method] | a) Open GT Designer.<br>b) Read the file of the screen data for which bar code reader connection is to be set. | |
| [System information] | c) Set the write device and the read device.<br>On the menu, select "Common"-"System Information".<br>Set "Read device" and "Write device" inside the word device range of the connected equipment.<br>After setting, click the [OK] button.<br>  <br>For the word device range specifications, refer to section 3.3. | The "System Information" dialog box appears. |
| [Bar code setting] | d) Set the head device and the number of devices (default value: 2) to which the data read by the bar code reader is transferred (GOT-F900 → connected equipment).<br>On the menu, select "Common"-"Barcode". Set "Device" and "Device points".<br>After setting, click the [OK] button.<br>  <br>For the word device range specifications, refer to section 3.3. | The "Bar Code Settings" dialog box appears. |

### 3) DU/WIN

| Operation | | Display (screen name) |
|---|---|---|
| [Setting method] | a) Open DU/WIN.<br>b) Read the file of the screen data for which bar code reader connection is to be set. | |
| [Control device] | c) Set the control devices.<br>On the menu, select "View/Project"-"System Settings"-"Interface Devices".<br>Set "Word Device" and "Bit Device" inside the device range of the connected equipment.<br>After setting, click the [OK] button.<br>  <br>For the word device range specifications, refer to section 3.3. | The "Interface Devices" dialog box appears. |
| [Bar code setting] | d) Set the head device and the number of devices (default value: 2) to which the data read by the bar code reader is transferred (GOT-F900 → connected equipment).<br>On the menu, select "View/Projects"-"System Settings"-"Bar Code Settings".<br>Check "Device points", and set "Device" and "Device points".<br>After setting, click the [OK] button.<br>  <br>For the word device range specifications, refer to chapter 3.3. | The "Bar Code Settings" dialog box appears. |

## 22.6 Cable Diagram

This section explains a cable diagram to connect the GOT-F900 and the bar code reader.

**1) Cable for the GOT and the bar code reader**

: Female type : Male type The connector figure shows the engagement face.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | Prepared by the user | RS-232C connection | GOT-F900<br>5 1<br>9 6<br>9-pin D-Sub, female<br>(2) RD(RXD)<br>(3) SD(TXD)<br>(6) DR(DSR)<br>(8) CS(CTS)<br>(5) SG(GND)<br>(4) ER(DTR)<br>Signal name on bar code reader side | Bar code reader |

## 22.7 Troubleshooting

For reference, this section summarizes frequently asked questions about connection of the GOT-F900 to the FX Series PLC.

| Contents of trouble | Check points and countermeasures |
|---|---|
| The data is not written to the PLC normally. | The data is not written to the PLC.<br><br>• Cause<br>1) The communication specifications are not satisfied.<br>2) Wrong wiring.<br>3) Either signal, the bar code input signal, the bar code input invalid signal or the bar code input read completed signal, assigned to the device (system information/control device) is ON.<br>• Countermeasures<br>1) Check the specification of the bar code reader.<br>2) Check the wiring between the GOT and the bar code reader.<br>3) Change the bar code input read completed signal to ON in the PLC, the GOT sets to OFF the bar code input signal. |
| | The data is partially written to the PLC<br>(After receiving the end code (CR: 0DH) from the bar code reader, the GOT writes data to the PLC. Accordingly, it does not usually occur that data is partially written.)<br><br>• Cause<br>1) The number of devices may be small.<br>2) The bar code reader specifications are not satisfied.<br>3) The data may be interrupted while being transferred.<br>• Countermeasures<br>1) Check the setting of the bar code in the screen creation software.<br>2) Check the bar code reader specifications.<br>3) Check whether there is imperfect contact in such places as a connector. |

# 23. Appendix

This chapter describes diversified technical information.

## 23.1 Connection of Programming Tools via FX-2PIF

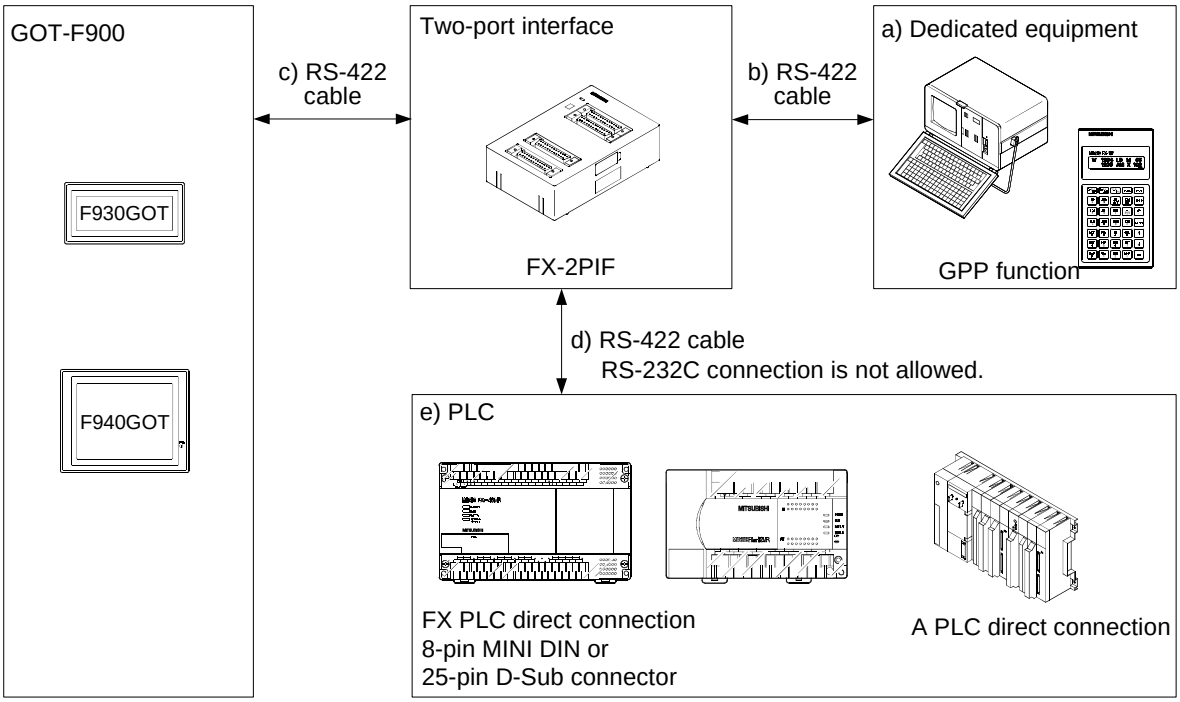
### 23.1.1 How to Monitor Using A6GPP/A7PHP/HPP

This section explains the connection method to execute program transfer/monitoring from the dedicated equipment for PLC programming (such as the A6GPP, the A7PHP, the FX-10P and the FX-20P) using the FX-2PIF two-port interface connected to the RS-422 port of the GOT-F900.

**1) Connection condition**

| Target model | | Applicable PLC | Remarks |
|---|---|---|---|
| F930GOT<br>F930GOT-K<br>F940GOT<br>F940WGOT<br>F940 Handy GOT | Only models equipped with RS-422 I/F | FX PLC direct connection<br>A Series CPU direct connection | |

**2) F930GOT/F930GOT-K/F940GOT/F940WGOT**




Cables for the dedicated equipment

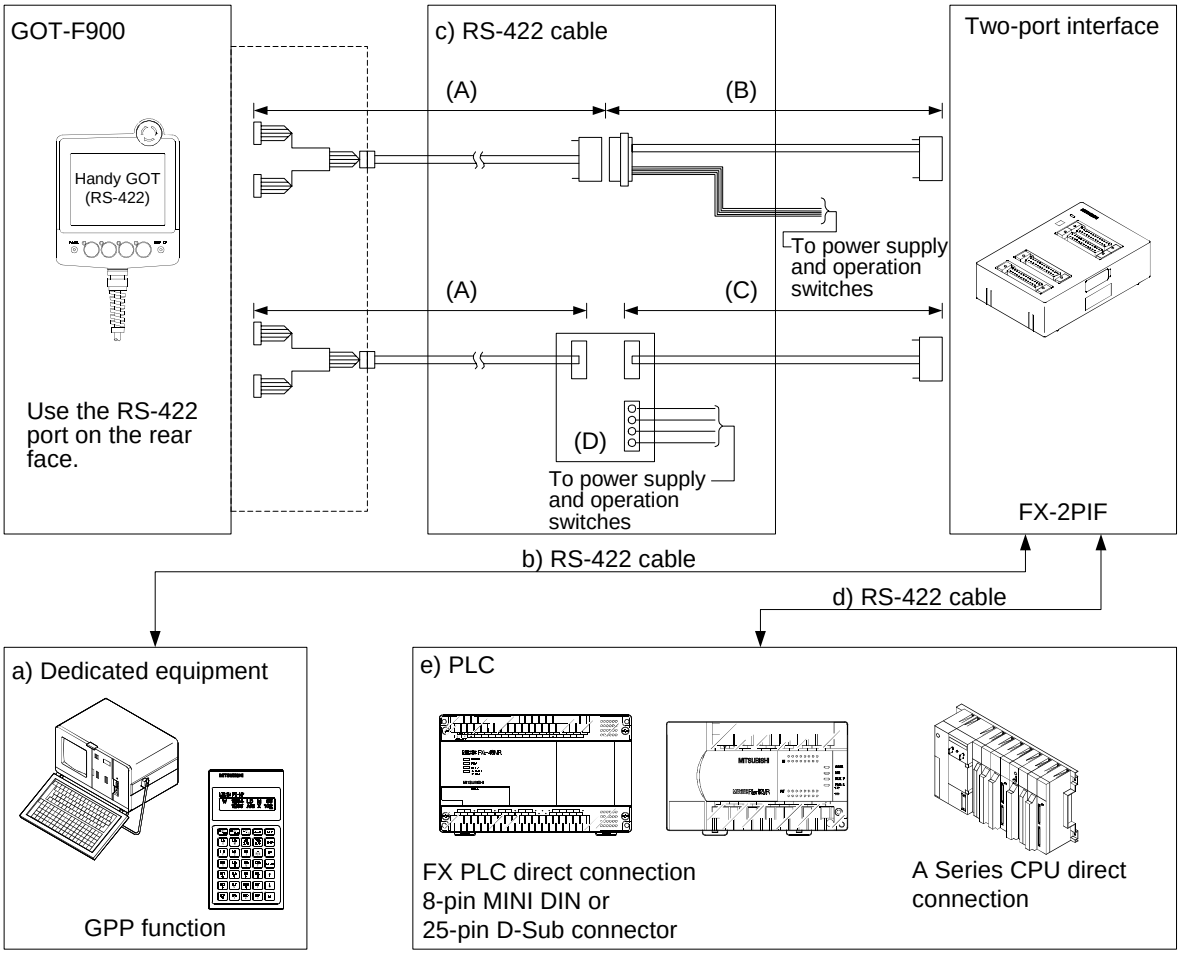
| a) Dedicated equipment | b) RS-422 cable |
|---|---|
| FX-10P, FX-20P | FX-20P-CAB |
| A6PHP, A6GPP, A7PHP, A7HGP | AC-30R4 |

Cables for the GOT-F900

| c) RS-422 cable | e) Connectable PLC | d) RS-422 cable |
|---|---|---|
| FX-40DU-CAB<br>FX-40DU-CAB-□□M<br>FX-50DU-CABL | FX PLC direct connection (25-pin D-Sub)<br>A Series CPU direct connection (25-pin D-Sub) | FX-422CAB |
| | | FX-422CAB-150 |
| | FX PLC direct connection (8-pin MINI DIN) | FX-422CAB0 |

- "□□" indicates cable length.
- The right-angle type cable (FX-50DU-CABL) cannot be used for the F930GOT and F930GOT-K.

### 3) F940 Handy GOT




Cables for the dedicated equipment

| a) Dedicated equipment | b) RS-422 cable |
|---|---|
| FX-10P, FX-20P | FX-20P-CAB |
| A6PHP, A6GPP, A7PHP, A7HGP | AC-30R4 |

Cables to the GOT-F900

| c) RS-422 cable | e) PLC | d) RS-422 cable |
|---|---|---|
| (A)F9GT-HCAB-□□M<br>(B)F9GT-HCAB3-150<br>(C)FX-40DU-CAB<br>(D)F9GT-HCNB | FX PLC direct connection (25-pin D-Sub)<br>A Series CPU direct connection (25-pin D-Sub) | FX-422CAB |
| | | FX-422CAB-150 |
| | FX PLC direct connection (8-pin MINI DIN) | FX-422CAB0 |

- "□□" indicates cable length.

### 23.1.2 Restrictions in Number of Devices Monitored When Using FX-2PIF

The table below shows the applicable PLC according to the versions of FX-2PIF.
When using with an A Series PLC, there are restrictions in the quantity of data being monitored.

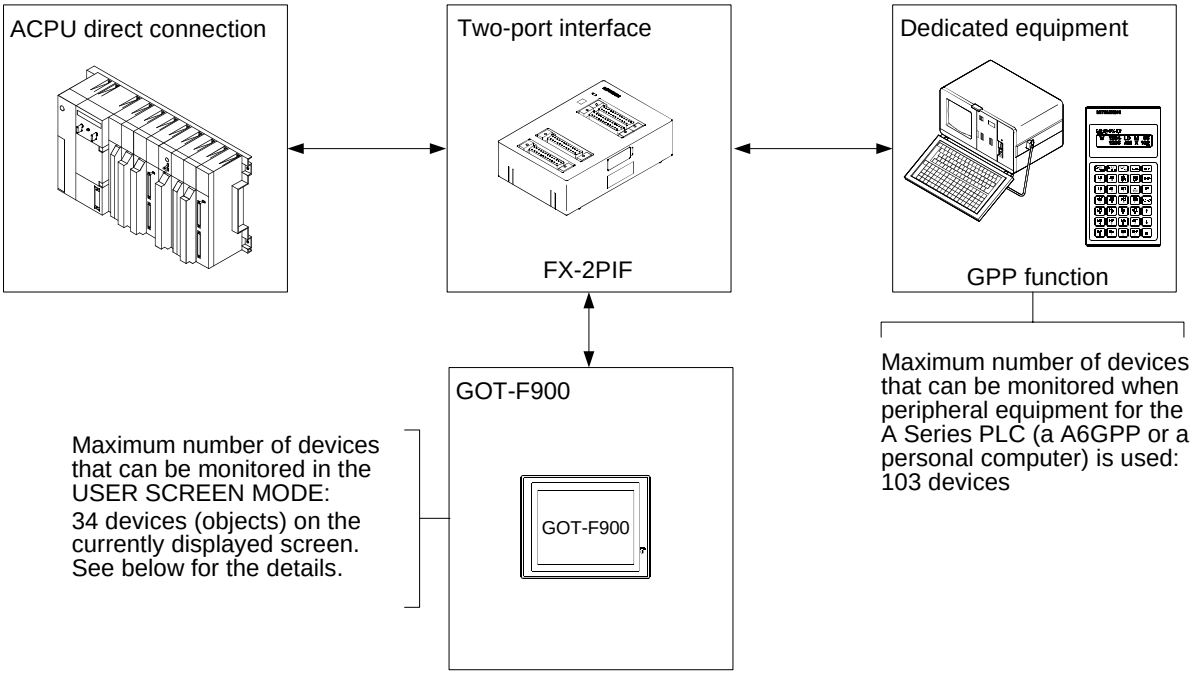
**1) System Condition**

| Applicable PLC | | Versions of FX-2PIF | Applicable dedicated equipment |
|---|---|---|---|
| FX Series | FX0, FX0S, FX0N, FX1, FX2, FX2C | 1.00 or later | FX-10P<br>FX-20P<br>GP-80<br>A6GPP/PHP<br>A7PHP/HGP<br>(Personal computer *1) |
| | FX2N, FX2NC | 2.00 or later | |
| A Series | AnA, AnN, A2C | 2.00 or later | |
| | A1S, A0J2H | 2.10 or later | |
| | AnU | 2.20 or later | |

- The applicable dedicated equipment above can be connected to FX-2PIF.

*1 Even though the COMPUTER port (RS-232C) of FX-2PIF is available for connecting a personal computer, there is no need to use it because the function is built in the GOT-F900.

**2) Restrictions in the number of devices being monitored (only when the A Series PLC is connected)**


ACPU direct connection
Two-port interface
FX-2PIF
Dedicated equipment
GPP function
Maximum number of devices that can be monitored when peripheral equipment for the A Series PLC (a A6GPP or a personal computer) is used: 103 devices
GOT-F900
GOT-F900
Maximum number of devices that can be monitored in the USER SCREEN MODE:
34 devices (objects) on the currently displayed screen.
See below for the details.

**3) Calculation of active devices at one time (when the A Series PLC is connected)**

The number of devices, "Number (Numerical Display), Bar Graph, Indicator (Lamp), Change Screen (Display screen changeover)", in the USER SCREEN MODE is calculated using the following formula. Have in mind, however, the number of devices being monitored varies depending on the setting of the bar code reader, printer connection and GOT system in the screen creation software.

$$\text{Common screen} + \text{Base screen} + \underline{\text{Overlap window 1} + \text{Overlap window 2}} \leq 34$$
(Overlapped screens)

The total sum of devices from the Common screen (only in the DU/WIN software) and each of the screens is calculated while referring to the table on the next page, and should be within the range shown above. Correct monitoring cannot be executed if too many devices are connected.

| Connected PLC: AnA | | Connected PLC: AnN, A2C, A1S, A0J2H | |
|---|---|---|---|
| Object | Number of objects used | Object | Number of objects used |
| Number (Numerical Display), Bar Graph: 16 bits | 2 | Number (Numerical Display), Bar Graph: 16 bits | 2 |
| Number (Numerical Display), Bar Graph: 32 bits | 4 | Number (Numerical Display), Bar Graph: 32 bits | 4 |
| Indicator (Lamp) | 1 | Indicator (Lamp)<br>Device settings: other than "Input X"<br>Device settings: "Input X" | <br>1<br>2 |
| Change Screen (Display screen changeover) using device conditions | 1 | Change Screen (Display screen changeover)<br>Device settings: other than "Input X"<br>Device settings: "Input X" | <br>1<br>2 |

- The current value and indirectly specified value set by the Number (Numerical Display) and Bar Graph is counted.
  The device conditions used in the Change screen (Display screen changeover) setting is counted.
- When performing the screen display or screen overlap, make sure the total number of devices on displayed screens does not exceed the total in the previous formula (34).

**4) Restriction in PLC current consumption**

The FX-2PIF current consumption is shown in the following table.The power is supplied from the 5V DC power supply of the PLC.
For the 5V DC power capacity, refer to the PLC manual.

| Item | Specification |
|---|---|
| Line voltage | 5V DC (supplied from the PLC) |
| Current consumption | 310mA (when a personal computer PC9801 or PC/AT compatible model is used.)<br>340mA (when FX-20P is used.)<br>180mA (when A7PHP, A7HGP, A6GPP, A6PHP, A6HGP and MELSEC-LM is used.) |

### 23.1.3 Switch Setting in FX-2PIF

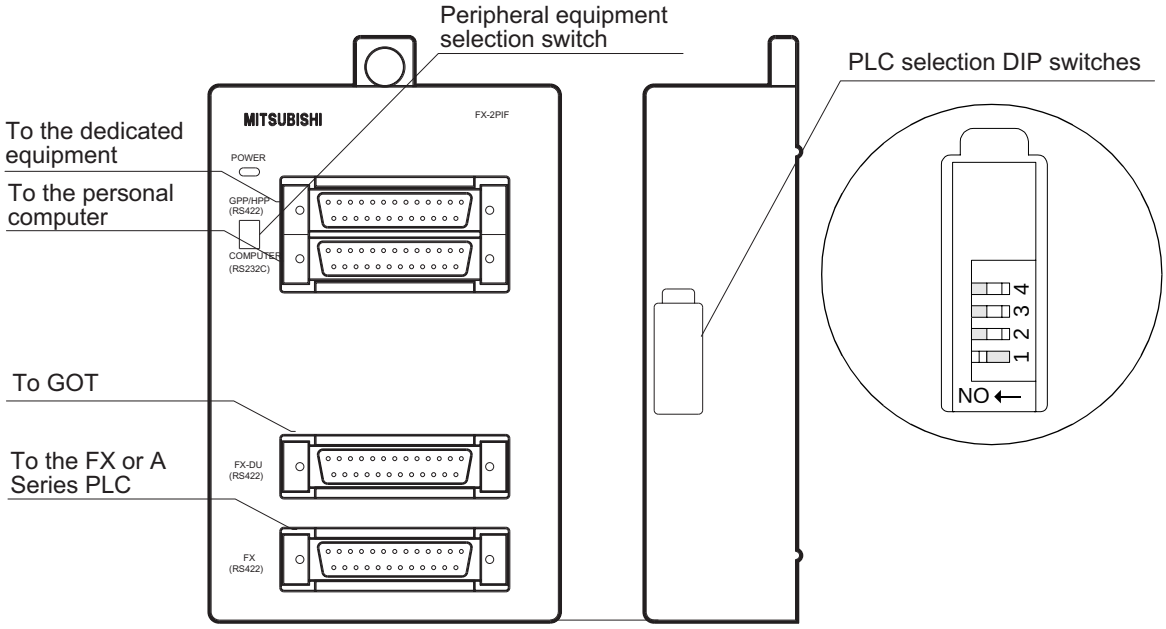
Perform the following switch settings in accordance with the connected MELSEC-F/A Series PLC or peripheral equipment.
For the details, refer to the FX-2PIF USER'S GUIDE (JY992D38501).

**1) Peripheral equipment selection switch**

| Peripheral equipment selection switch (Underline indicates setting at shipment) | Peripheral equipment for GPP |
|---|---|
| GPP/HPP side | A7PHP/HGP<br>A6GPP/PHP/HGP |
| COMPUTER side | Personal computer (PC-9800, PC/AT compatible equipment)<br>Dedicated peripheral equipment (MELSEC-LM Series) |

**2) PLC selection DIP switches**

| PLC selection DIP switches | | | | Applicable PLC |
|---|---|---|---|---|
| Number 1 | Number 2 | Number 3 | Number 4 | |
| OFF | OFF | OFF | OFF | FX Series PLC except FX2N Series |
| OFF | ON | OFF | OFF | FX2N Series PLC (FX-2PIF version 3.00 or later) |
| ON | OFF | OFF | OFF | A Series PLC except AnU Series |
| ON | ON | OFF | OFF | AnU Series PLC |




To make the change in switch setting valid, the power must be turned off and then turned on again.

### 23.1.4 Cautions on Use of FX-2PIF

When using the FX-2PIF connected to the GOT-F900 for monitoring, observe the following cautions on use.

**1) Access to PLC CPU through FX-2PIF**

a) The access from the dedicated equipment (GPP function) or GOT is enabled only when the PLC is connected with the FX-2PIF.
Because of the restriction in communication time, access to another MELSECNET PLC station is not possible. A communication error (time out error) will occur.

Example: IF a GOT tries to access a different PLC station, an error occurs in the communication between the dedicated equipment (GPP function) and the PLC.

b) When using FX-2PIF, the response speed from the PLC CPU to the GOT or dedicated equipment (GPP function) is approximately four or five times slower than when it is not used. The same situation exists when either the GOT or dedicated equipment (GPP function) is connected to the FX-2PIF.

**2) Operation of dedicated equipment (GPP function) through FX-2PIF**

a) The circuit monitor by the GPP function is available to monitor 103 points (*1).

*1 Includes the monitor points of RUN/STOP status of the PLC and scan time counted by the special data register. An error will not occur even though the number of devices being monitored exceeds 103, however, the extra devices are not monitored correctly.

b) While the GPP function is being used for monitoring timer/counter settings of the PLC CPU, it displays the original set value even after a change is made by the GOT. In such a case, the program should be read from the PLC CPU so that the latest set value is displayed. The display of the set value in the PLC CPU and the GOT is changed if any setting change is made using the GOT.

### 23.1.5 Cable Diagram

#### 1) Cable for the GOT and the FX-2PIF

: Female type : Male type The figure shows the connector type.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>FX CPU direct connection<br>FX-40DU-CAB<br>FX-40DU-CAB-10M<br>FX-40DU-CAB-20M<br>FX-40DU-CAB-30M<br>FX-50DU-CABL | GOT-F900<br>1 5<br>6 9<br>9-pin D-Sub, male | (1)–(2)<br>(2)–(3)<br>(3)–(4)<br>(4)–(5)<br>(5)–(7)<br>(6)–(15)<br>(7)–(16)<br>(8)–(17)<br>(9)–(18)<br>(8)–(21) | FX/FX1/FX2/FX2C<br>1 13<br>14 25<br>25-pin D-Sub, male |

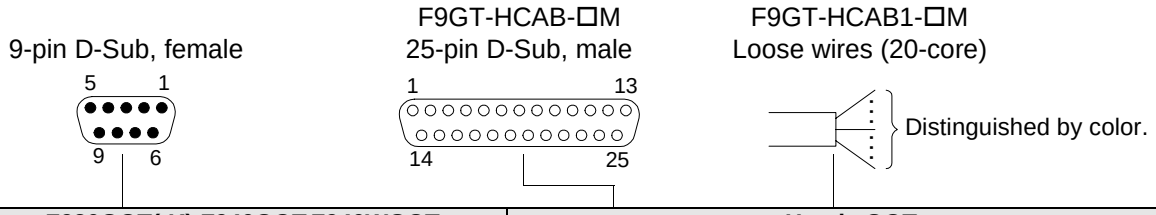
#### 2) Cable for the FX-2PIF and PLC

: Female type : Male type The figure shows the connector type.

| No. | Model name | Application | Connection diagram | Application |
|---|---|---|---|---|
| a) | RS-422 connection<br>FX-422CAB0 | FX-232AW(C)<br>1 13<br>14 25<br>25-pin D-Sub, male | (2)–(2)<br>(3)–(7)<br>(7)–(3)<br>(12)–(5)<br>(15)–(1)<br>(16)–(4)<br>(20)–(6)<br>(24)–(8)<br>(5)–(8)<br>(21)–(18)<br>(25) | FX0/FX0S/FX1S/FX0N/<br>FX1N/FX2N/FX1NC/FX2NC<br>3 4 6 1 7 2 8 5<br>8-pin MINI DIN, male |
| b) | RS-422 connection<br>FX-422CAB | FX-232AW(C)<br>1 13<br>14 25<br>25-pin D-Sub, male | (1)–(1)<br>(2)–(2)<br>(3)–(3)<br>(4)–(4)<br>(5)–(5)<br>(7)–(7)<br>(8)–(8)<br>(12)–(12)<br>(13)–(13)<br>(15)–(15)<br>(16)–(16)<br>(17)–(17)<br>(18)–(18)<br>(20)–(20)<br>(21)–(21)<br>(24)–(24)<br>(25)–(25) | FX/FX1/FX2/FX2C/A/<br>QnA<br>1 13<br>14 25<br>25-pin D-Sub, male |

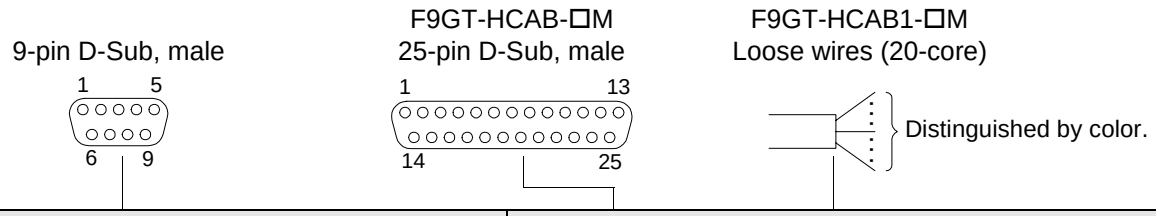
## 23.2 GOT-F900 Connector Signal Correspondence Table (Excluding the F920GOT-K)

### 23.2.1 RS-422 Correspondence Table




| F930GOT(-K),F940GOT,F940WGOT | | Handy GOT | | |
|---|---|---|---|---|
| Pin number of D-Sub port on rear face | RS-422 signal name | F9GT-HCAB-☐M Pin number | F9GT-HCAB1-☐M Loose wire color | RS-422 signal name |
| 1 | TXD+(SDA) | 2 | Black | TXD+(SDA) |
| 2 | RXD+(RDA) | 6 | Yellow | RXD+(RDA) |
| 3 | RTS+(RSA) | 4 | Red | RTS+(RSA) |
| 4 | CTS+(CSA) | 8 | Blue | CTS+(CSA) |
| 5 | SG(GND) | 10 | Orange | SG(GND) |
| 6 | TXD-(SDB) | 3 | White | TXD-(SDB) |
| 7 | RXD-(RDB) | 7 | Brown | RXD-(RDB) |
| 8 | RTS-(RSB) | 5 | Green | RTS-(RSB) |
| 9 | CTS-(CSB) | 9 | Gray | CTS-(CSB) |
| – | – | 1 | Drain wire | FG (shield) |

### 23.2.2 RS-232C Correspondence Table




| F930GOT(-K),F940GOT,F940WGOT | | Handy GOT | | |
|---|---|---|---|---|
| Pin number of D-Sub port on rear face | RS-232C signal name | F9GT-HCAB-☐M Pin number | F9GT-HCAB1-☐M Loose wire color | RS-232C signal name |
| 1 | NC | 8 | Blue | NC |
| 2 | RD(RXD) | 4 | Red | RD(RXD) |
| 3 | SD(TXD) | 2 | Black | SD(TXD) |
| 4 | ER(DTR) | 3 | White | ER(DTR) |
| 5 | SG(GND) | 10 | Orange | SG(GND) |
| 6 | DR(DSR) | 5 | Green | DR(DSR) |
| 7 | RS(RTS) | 6 | Yellow | RS(RTS) |
| 8 | CS(CTS) | 7 | Brown | CS(CTS) |
| 9 | User cannot use | 9 | Gray | NC |
| – | – | 1 | Drain wire | FG (shield) |

## 23.3 Error Messages in GOT-F900 Series

The table below shows Japanese and English messages displayed when the GOT-F900 is connected to the PLC, bar code reader or printer. Refer to the countermeasures on the next page.
The error messages have been changed for greater clarity in later versions of the OS.

| No. | Japanese message | English message | OS version of GOT-F900 | | | |
|---|---|---|---|---|---|---|
| | | | F940WGOT | F940GOT | F930GOT(-K) | |
| 1 | 通信エラーが発生しました | COMMUNICATION ERROR OCCURS. | From first product | From first product | From first product | |
| 2 | 該当する画面がありません | DISPLAY SCREEN IS NOT AVAILABLE. | – | Earlier than 6.00 | Earlier than 4.00 | |
| | 次の画面がありません (NO. ####) | DISPLAY SCREEN IS NOT AVAILABLE.(NO.####) | From first product | 6.00 or later | 4.00 or later | |
| 3 | 該当する画面にエラーがあります | DISPLAY SCREEN IS NOT AVAILABLE. | – | Earlier than 6.00 | Earlier than 4.00 | |
| | 次の画面にエラーがあります (NO. ####) | DISPLAY SCREEN IS NOT AVAILABLE.(NO.####) | From first product | 6.00 or later | 4.00 or later | |
| 4 | データがありません | DATA IS NOT FOUND. | – | Earlier than 6.00 | Earlier than 4.00 | |
| | | | From first product | 6.00 or later | 4.00 or later | |

"###" in the table above indicates the screen number in which the error has occurred.

The messages and countermeasures for the F920GOT-K may be slightly different.

| | F920GOT-K | Countermeasures |
|---|---|---|
| | From first product | • The power of the connected equipment is turned off.<br>→ Confirm the power supply voltage.<br>• The wiring between the connected equipment (PLC) is not correct.<br>→ Refer to the appropriate wiring section.<br>• In connection of two or more GOT units, the opening screen display period in the second and later GOT units is not long enough.<br>→ Refer to the description on connection of two or more GOT units.<br>• The power of the GOT is turned on before the PLC.<br>→ Make sure that communication with the connected equipment is ready before display of the opening screen of the GOT is finished. |
| | – | • Changeover to a nonexistent (uncreated) screen.<br>→ By selecting "SELECT MODE"-"TEST MODE"-"USER SCREEN", check whether the screen data to be displayed exists. |
| | From first product | • A nonexistent screen was to be displayed.<br>→ Make sure that the screen No. #### has been created. |
| | – | • There is an error on the changeover destination screen.<br>→ By selecting "SELECT MODE"-"TEST MODE", check whether the changeover destination screen is free from error and displayed correctly.<br>If there is an error, "×" is displayed at the head of the list on the screen. |
| | From first product | • There is an error on the screen to be displayed.<br>→ By selecting "SELECT MODE"-"TEST MODE" in the GOT, check whether the screen is displayed correctly.<br>If there is an error, "×" is displayed at the head of the list on the screen. |
| | – | • The GOT-F900 is in the factory default settings and no screen data is available.<br>→ Write the screen data using the screen creation software.<br>• The memory of the GOT-F900 is cleared.<br>→ Write the screen data using the screen creation software.<br>• The head screen has not been created.<br>→ The head screen is the screen number 1 in the GT Designer, and the screen number 0 in the DU/WIN.<br>The head screen is essential and must be created.<br>• There is an error on the head screen.<br>→ By selecting "SELECT MODE"-"TEST MODE", check whether the changeover destination screen is free from error and displayed correctly.<br>If there is an error, "×" is displayed at the head of the list on the screen. |
| | From first product | • The GOT-F900 is in the status at shipment from the factory, and no screen data is written.<br>→ Write the screen data using the screen creation software.<br>• The memory of the GOT-F900 is cleared.<br>→ Write the screen data using the screen creation software. |

If the screen with "×" in the list of "TEST MODE" is tried to be displayed, the message "BAD OBJECT EXISTS" is displayed.

### 23.3.1 Error Messages During Screen Operation

| No. | Japanese message | English message | OS version of GOT-F900 | | | |
|---|---|---|---|---|---|---|
| | | | F940WGOT | F940GOT | F930GOT(-K) | |
| 1 | PCメモリが書込み禁止です | CAN NOT WRITE TO PLC MEMORY. | Earlier than 1.10 | Earlier than 6.10 | Earlier than 4.10 | |
| | 書込み禁止です | CAN NOT WRITE. | 1.10 or later | 6.10 or later | 4.10 or later | |
| 2 | キーワードがあるので<br>その操作はできません | CAN NOT USE THE FUNCTION WHILE PROTECTED. | From first product | From first product | From first product | |
| 3 | PCがRUN中です | PLC IS RUNNING. | From first product | From first product | From first product | |

| | F920GOT-K | Countermeasures |
|---|---|---|
| | – | • The protect switch of the memory cassette is ON.<br>→ Set the protect switch to OFF.<br>• In the program of the FX Series PLC, passwords are used and write is disabled.<br>→ By selecting "SELECT MODE"-"OTHER MODE"-"ENTRY CODE" in the GOT, release the passwords. |
| | From first product | • The protect switch of the memory cassette is ON.<br>→ Set the protect switch to OFF.<br>• In the program of the FX Series PLC, passwords are registered and write is disabled.<br>→ By selecting "SELECT MODE"-"OTHER MODE"-"ENTRY CODE" in the GOT, release the passwords.<br>• While the inverter was not in the computer link operation mode or while the inverter was running, parameter (Pr) to communication was attempted.<br>→ In the manual of the inverter, check the allowable write range in operation mode. |
| | From first product | • In the program of the FX Series PLC, passwords are registered and write is disabled.<br>By selecting "SELECT MODE"-"OTHER MODE"-"ENTRY CODE" in the GOT, release the passwords. |
| | From first product | • While the FX Series PLC was running with the EEPROM memory cassette, the set value of the timer, counter or the file register was attempted to be changed from the screen of the GOT-F900.<br>→ Specify the set value of the timer or the counter indirectly using the data register (D) or run the PLC with the built-in memory. |

# MEMO

# HARDWARE MANUAL (CONNECTION)

GOT-F900 SERIES GRAPHIC OPERATION TERMINAL

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: MITSUBISHI DENKI BLDG MARUNOUCHI TOKYO 100-8310 TELEX: J24532 CABLE MELCO TOKYO
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